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AMOSIST PROGRAM FIELD EVALUATION PHYSICIAN SAVINGS AND COST EFF--ETC(U)
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AMOSIST PROGRAM FIELD EVALUATION
PHYSICIAN SAVINGS AND COST EFFECTIVENESS.

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cost effective. The analyses indicated that the physician time required to treat the average patient in the traditional, physician-staffed general out-patient clinic (GOC) was significantly larger than the amount of physician time required to treat the average patient treated in an AMIC. The average cost per patient was determined by individually weighting the treatment times by the hourly wage equivalents of the salaries of the principal care providers involved in the care of each patient. The analyses of this data indicated that AMIC-provided care was significantly less expensive than that of GOC-provided care at the level of physician care/consultation costs which would normally be encountered at such clinics. Additional clinic time parameters were also reported.

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SUMMARY

Temporal measures of care-provider activity were obtained through the use of time clocks at three US Army Acute Minor Illness Clinics (AMICs) and at three US Army General Outpatient Clinics (GOCs). The principal care providers at the former are physician-supervised enlisted medical corpsmen (AMOSISTS) who employ written medical algorithms to treat patients suffering acute minor illnesses. The principal care provider for the latter are physicians. Comparisons were made of the data from these two systems of health care delivery to determine if the use of AMOSISTS: (a) resulted in savings of physicians' time, or (b) was cost effective. The data used to address the issue of physician savings were those times associated directly with the activities of those who provide the direct patient care within these clinics. The issue of cost effectiveness was addressed by weighting these same times by the hourly wage equivalent of the salaries of those providing care. The principal findings were that, vis-a-vis GOC and GOC-physician delivered care, AMIC and AMOSIST delivered care (a) required significantly less physician time, and (b) at the levels of physician care/cost most likely to be encountered in such clinics, were less costly. Data pertaining to other time parameters are presented.

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AMOSIST PROGRAM FIELD EVALUATION
PHYSICIANS SAVINGS AND COST EFFECTIVENESS

1. INTRODUCTION

The background of the present study is more fully presented in the initial, Phase I, report on this project (Schopper, 1978). In brief, this study was initiated in response to a request for information concerning the operational status and effectiveness of the US Army's AMOSIST Program, a physician extender program developed by the US Army Medical Department (AMEDD) in response to the physician shortage which has become acute within the Army since the advent of the All-Volunteer concept. The program is designed to provide care to unappointed patients suffering acute minor illnesses. Care is provided to these patients by enlisted corpsmen (AMOSISTS) who utilize written medical algorithms to guide their work in arriving at a diagnosis and rendering a treatment plan (to include the prescription of designated medications). The Phase I report addressed the operational characteristics of the program and the extent to which the program has been accepted by both patients and staff. The present report will address time and cost parameters. Subsequent reports will address the issues of the safety and effectiveness of the care delivered and the stability of the program regarding the issues of acceptance and operational characteristics.

2. OBJECTIVES

The principal objectives of the study which are addressed in the present report are two:

2.1 To determine whether the AMOSIST Program is cost effective.

2.2 To determine whether the AMOSIST Program results in a saving of physician's time.

3. METHODOLOGY

3.1 Overview. The general approach was to select three Acute Minor Illness Clinics (AMICs, the name applied to clinics which employ AMOSISTS and operate under the provisions of the Health Services Command's AMOSIST Program guidelines) and contrast their operation with three traditionally-staffed General Outpatient Clinics (GOCs). (The guidelines for the AMOSIST Program are contained principally in the US Army Health Services Command's Ambulatory Patient Care (APC) Model #13 and its associated Implementation Packet.) The data upon which the comparisons are based are derived from on-site, time-clock recorded measures of clinic care-provider activities. The three AMICs included in the study were selected on the basis of their having been recognized during the prior,

Phase I, on-site visits as being among those which were being operated in the most appropriate and effective manner. While this selection process clearly delimits the generality of the findings, such was believed to be a necessary condition since (a) informal pre-study observations indicated that there was considerable inter-site variance in the extent to which individual AMICs are actually conforming to existing program guidelines, and (b) it would have been inappropriate to have made AMIC-GOC comparisons on the basis of AMICs which are clearly not operating in accordance with existing guidelines. As a result, the findings presented herein must be considered to be indicative, perhaps, of the "potential" of the AMOSIST program rather than being representative of the entire Health Services Command's AMOSIST Program.

3.2 Site Selection. The second phase, on-site evaluations involved six MEDDACs. Three were selected from twelve sites that had been visited during the on-site AMIC evaluations conducted during the initial phase of the study. For the purpose of comparison, three additional sites were selected from those MEDDACs who had not adopted the AMOSIST program. The three AMIC sites visited during the present phase (Phase II) of the study were those whose operation at the time of the initial, Phase I on-site visits was judged to be the most effective and in the greatest accord with existing HSC guidelines. The three GOC sites were chosen on the basis of two criteria: (a) The degree to which the clinic's operation was free from the use of physician extenders as principal care providers, and (b) the number of patients treated in the clinic each month. These criteria were employed in order to: (a) as closely as possible, approximate the working conditions of a "purely traditional" GOC operation, and (b) to minimize the amount of data which would be collected during the fixed two-week period allotted for each visit.*

3.3 Advance Notification. Each site was initially notified by letter approximately eight weeks prior to the time of the on-site visits that their site had been selected for the two-week evaluation. This initial notification (Appendix A) requested the designation of a local action officer with whom direct coordination could be established and provided instructions regarding the marking of the records to be

*US Army Health Clinics were not included for consideration. Furthermore, the MEDDAC at West Point was also excluded from the GOCs sites available for consideration since the nature of its patient population was considered to be "atypical" when considered vis-a-vis the patient population encountered at other MEDDACs within HSC.

subsequently evaluated in the retrospective audit portion of the study. A follow-up letter (Appendix B) to each MEDDAC commander was provided approximately three weeks prior to the arrival of the two-man, on-site study team. This letter apprised the commander of the intended use of the time clocks within the clinics, identified the study team members, and requested that appropriate billeting and mess facilities be arranged for the duration of their visit. At approximately two weeks prior to the arrival of the team, the designated local action officer was provided with a packet of information which described the time clock methodology and the apparatus to be utilized in the study (i.e., multiple copies of inclosures 1-4 of Appendix C for handouts to each care provider along with a schematized patient flow diagram and accompanying description, Appendix D). The instructions to the local action officer also requested that he briefly inform clinic personnel regarding these matters and provide each care provider a copy of relevant descriptive materials. Furthermore, he was requested that they familiarize themselves with these materials prior to the arrival of the study team. Additionally, it was requested that the local action officer arrange for an initial briefing (30-45 minute) period prior to the opening of the clinic on the first day of the data collection in order that the study team might be allowed to further describe the system to clinic personnel and answer their questions.

3.4 Schedule of Visits. Each on-site visit was to last two weeks. The dates of these visits are shown below:

<u>SITE</u>	<u>INCLUSIVE DATES</u>
AMIC #1	8-12 May 1977
AMIC #2	15-28 May 1977
AMIC #3	5-18 June 1977
GOC #1	15-28 May 1977
GOC #2	5-18 June 1977
GOC #3	5-18 June 1977

The initial plan was to complete the visits within a five week period. However, due to the anticipated departure from the Army of the AMOSIST

physician at the first site, the start date for the AMIC first site visit was moved up one week at the request of the MEDDAC.*

3.5 Time Clock Apparatus and Utilization

3.5.1 Time Clocks. The time clocks used in the study were Simplex Type 8400.** These units automatically recorded the time in hours (24 hour time) and hundredths of an hour whenever a time card was inserted into it.

3.5.2 Time Clock Deployment. Time clocks were placed at the following locations within each clinic: (1) receptionist's desk, (2) vital sign recording area, (3) patient waiting area(s), and (4) one each within each care provider's office/examination room. An additional time clock was placed within each AMOSIST physician's office/examination room to record the times associated with the consultation rendered to AMOSIST at AMIC sites.

3.5.3 Time Card. A time card, Figure 1, was initiated for each patient entering the clinic. Each card possessed a unique 5-digit number which served to identify the patient (for the purpose of the study) throughout his time in the clinic. As shown in Figure 1 the following data were to be entered at the top of each card as the patient passed through the clinic: (1) site, (2) day of week, (3) patient's disposition, (4) type of care provider, (5) whether or not laboratory tests, x-rays or consultations for physician extender personnel were required, and (6) the category of illness for which the patient was treated. These codes used in completing this upper portion of the time card are shown in Figure 2.

*The effort proved to be of little avail, for that physician was in leave status and absent from the AMIC during the period of the on-site visit. The AMOSIST physician who was present had been assigned there for only two weeks prior to the beginning of the evaluation. However, for other reasons (see paragraph 3.7.3.3), much of the data from this site had to be excluded from the analysis.

**The time clocks were borrowed from the Indian Health Service, Tucson Arizona. They are precisely the same clocks employed in a study recently reported concerning the operation of the AMIC involved in the clinical research study of AMOSIST-employed algorithms currently ongoing at Brooke Army Medical Center (Tompkins et al, 1977).

TIME CARD

12

FIGURE 2

LINE CARD DATA ENTRY CODES

SITE: 1 -

2 - site names
3 - appeared
4 - here
5 -
6 -

DAY OF WEEK:

1 - Monday
2 - Tuesday
3 - Wednesday
4 - Thursday
5 - Friday

PT DISP:

1 - Evaluation/treatment completed
Within clinic.
(If further evaluation/treatment
required, patient referred to:)
2 - Orthopedics
3 - Physical Therapy
4 - OB/GYN
5 - ENT
6 - Ophthalmology
7 - Urology
8 - Dermatology
9 - Internal Med, Gen Med, ER Phys.
0 - Other

CP INITIALS:

Care Providers
Initials

CP CATEG: (Care Provider's Category)

1 - Physician
2 - Physician Assistant
3 - Nurse Clinician
4 - AMOSIST
5 - Other

LAB REQD:

Laboratory Tests
Required

1 - None
2 - Blood
3 - Urine
4 - Bacteriological (to in-
clude throat culture)
5 - Some combination of
2, 3, 4, above.

SITE DAY OF WEEK PT DISP
CP INITIALS CP CATEG.
LAB REQD X-RAY REQD
CONSULTATION REQ
ALGORITHM (CATEG. ILLNESS)

X-RAY REQD:

1 - No
2 - Yes

CONSULTATION REQD:

1 - No
2 - Yes (On a time card
completed by a
Physician, a Yes
entry would be
used only if a
requested consult
interrupted the
ongoing treatment
of his own patient.)

ALGORITHM (CATEG. ILLNESS):

1 - Eye
2 - Respiratory
3 - Gastrointestinal
4 - Genitourinary
5 - Musculo-Skeletal Spine
6 - Musculo-Skeletal Extremity
7 - Skin - Regional
8 - Skin - General
0 - Other

3.5.4 Time Card Utilization. With the exception of the entries for site and day of week, and the entries made when a patient entered or exited the clinic itself, all entries upon the time card were made by care providers within the clinic. A time card was initiated for each patient at the initial point of contact with the clinic. At most sites, this was at the receptionist's desk. The appropriate entries were made at the top of the card and the time required to process the patient through the receptionist's desk was recorded. The time card was then attached to the inside of the patient's medical folder. Since the patient's medical record then became a part of the clinic's system of operation (i.e., the patient no longer physically retained his medical records), the time card remained with the patient's record, paralleling the patient's flow through the clinic as he subsequently had his vital signs taken and recorded, and later, as he received his examination/treatment by one of the clinic's principal care providers. At each point in the patient's travel through the clinic (i.e., subsequent to his initial contact), the person working at each station removed the patient time card to record the beginning and end of his contact with the patient. Separate provisions were also included to record consultations rendered by physicians to the various types of physician extenders encountered in the study. Provisions were also included to record absences from the clinic for the purpose of obtaining laboratory tests or x-rays. (More comprehensive and explicit descriptions of these procedures are found in Appendix C, the briefing booklet prepared for each on-site study team chief.)

3.6 Study Team Preparation. Prior to departing for the on-site evaluations, the study team members were each given a briefing booklet to review (Appendix C). Subsequently, a two-hour group briefing session was held for the on-site study team members in order to provide a more detailed explanation of their tasks, explain the operation of the time clocks, and answer any questions they may have had regarding the activities they were to perform.

3.7 Patient Sample

3.7.1 Patient Sample Used In Comparisons. Several factors affected the analysis of physician savings and costs effectiveness which are presented. The unexpected existence of a large number of physician-treated patients at AMIC #1 resulted in a substantial segment of data being eliminated from the analysis. A substantial

amount of data was also lost from one GOC site due to a local commander's refusal to permit his personnel to participate in the study during the first three days the team was on-site. Additionally, in order to effect consistency in the data base employed, the analyses were confined to those patients for which a disposition was indicated. The considerations are addressed more fully in the paragraphs which follows.

3.7.2 Distribution Among Care Providers. Table 1 depicts the differences among the sites regarding the distribution of patients among the types of care providers that existed within each. Among the GOCs, it is noted that only one site delivered all of its patient care in accordance with the traditional patient care model (i.e., all physician delivered care). Hence, on the basis of an examination of the care provider characteristics of GOCs alone, it is apparent that a "pure" comparison of physician vs AMOSIST or AMIC delivered care cannot be made by comparing in toto, all patient data from the GOCs with all patient data from the AMICs. Whereas it is clear that all GOC provided care is not delivered by physicians, it is equally clear from a perusal of the AMIC data that at one AMIC the care was not being provided in accordance with APC Model #13 guidelines. At AMIC #1, sixty-one percent of the care provided was delivered by physicians, and an additional nine percent of the care was delivered by physician assistants (PAs). For only thirty of the patients examined and treated therein was the principal care provider an AMOSIST. Clearly, the distribution of patient care providers at this AMIC (i.e., physician vs non-physician) was more like that of GOC than it was either of the other two AMICs.

3.7.3 Levels of Analysis

3.7.3.1 In accordance with the approved protocol for the study, the findings which are emphasized in the body of this report contrast the AMIC and the GOC at the system-wide level of analysis. This level of analysis results in a comparison of the time and care provider cost parameters associated with the average patient emanating from these two systems regardless of which types of care provider acted as the principal care provider for the patient. Such an analysis recognizes that the majority (but not all) of the patients receiving care in an AMIC receive care from an AMOSIST and that most, but not all, patients receiving care in a GOC will receive care from a physician. In this comparison, then, an average time and cost is computed to reflect the overall average per patient regardless of the mix of care providers comprising the system.

3.7.3.2 This "system-wide" comparison is contrasted with a second level of analysis which compares (a) the time and cost parameters associated with care delivered to AMIC patients for whom the AMOSIST was the principal care provider to (b) the same time and

Table 1

DISTRIBUTION OF PATIENTS AMONG SITES ACCORDING
TO CATEGORY OF PRINCIPAL CARE PROVIDER

SITE	Category of Care Provider				TOTAL NO. PATIENTS ^a
	Physician	PA	Nurse Clinician	AMOSIST	
AMIC #1	61.3%	8.9%	-	29.7%	811
AMIC #2	4.9%	-	-	95.1%	623
AMIC #3	1.0%	-	-	99.0%	501
GOC #1	70.9%	-	29.1%	-	485
GOC #2	65.4%	-	34.6%	-	366
GOC #3	100.0%	-	-	-	212

a. The data appearing to the left of each total are expressed in terms of the percent of the total number of patients for their respective clinics.

cost parameters associated with care delivered to GOC patients for whom the GOC physician was the principal care provider. This second level of analysis, the "care provider" level, directly contrasts AMOSIST delivered care parameters with GOC physician care parameters and excludes both the AMIC patient whose principal care provider was the AMOSIST physician and the GOC patient whose principal care provider was a nurse practitioner. To clarify further those patients defined as AMOSIST's patients, it is emphasized that these include all patients who were initially referred from the triage desk to an AMOSIST for care. The principal-time-and-cost-related computations which pertain to these patients do include, therefore, all applicable physician-related consultation times and costs, i.e., all those required to complete the examination/care/disposition of the AMOSIST's patient. In other words, the "care provider" level of comparisons do not delimit AMOSIST treated patients to only those patients for which the AMOSIST himself was able to complete all care without assistance/consultation from a physician. Albeit the results of these "care provider" comparisons will occasionally appear in the body of the text, the more comprehensive presentation of these findings is in the appendices which are cited. For the most part, it is noted that the "care provider" findings parallel those evidenced at the "system-wide" level. The principal difference is that the differences between the two systems of care are found to be larger at the "care provider" level than they are at the "system-wide" level.

3.7.3.3 The findings cited above (Table 1) regarding the distribution of patients among the clinic care providers at AMIC #1 necessitated that some adjustment be made to the full scale, system-wide analysis planned at the time the study protocol was finalized (Schopper, 1976). Whereas it was known prior to the initiation of the data collection that physician extenders of various sorts were being employed at nearly all of the remaining non-AMOSIST sites in CONUS, the marked use of physicians to provide care at AMIC #1 was unexpected. Therefore, in order to present meaningful system-wide comparisons, the data from AMIC #1 have been excluded from the analysis. System-wide comparisons will, therefore, contrast the combined data of AMICs #2 and #3 with the data from all three GOC sites. This exclusion does not apply to the "care provider" level of analysis. Since it was possible to extract the data for AMOSIST treated patients from the AMIC #1 data, they are included with the AMOSIST treated patients from AMICs #2 and #3 in determining the cost-related and time-related parameters for AMOSIST delivered and GOC physician delivered care. In sum, the "system-wide" level of comparisons will contrast the data from AMICs #2 and #3 with the data from all three GOCs, whereas the "care provider" level of comparisons will involve the relevant data from all three AMICs and all three GOCs.

3.7.4 GOC Non-Participation. Subsequent to the arrival of the study team at one GOC site, the local commander voiced his objections to the study and refused to permit his personnel to participate in the study. A compromise solution was reached after three days of discussion whereby the commander agreed to let personnel stand with time clocks outside the doors of the physicians' offices and record the data as the patients entered and exited. Continuing difficulties were encountered throughout the data collection period due to the inability to maintain continuity among the non-hospital personnel available to perform this function. As a result of this situation, approximately forty percent of the possible data from this site were lost.

3.7.5 Additional Sample Restrictions. In order that the findings to be presented might reflect essentially the same sample of patients throughout the report, the analyses were further confined to patients for whom a disposition was indicated by the care provider. The effect of this restriction was to reduce the size of the sample from 3101 to 2140 for the system-wide comparisons, and from 3014 to 2058 for the care provider comparisons. This reduction indicates that approximately one-third of the care providers neglected to indicate the patient's final disposition on the time card.

4. RESULTS AND DISCUSSION

4.1 Physician Savings

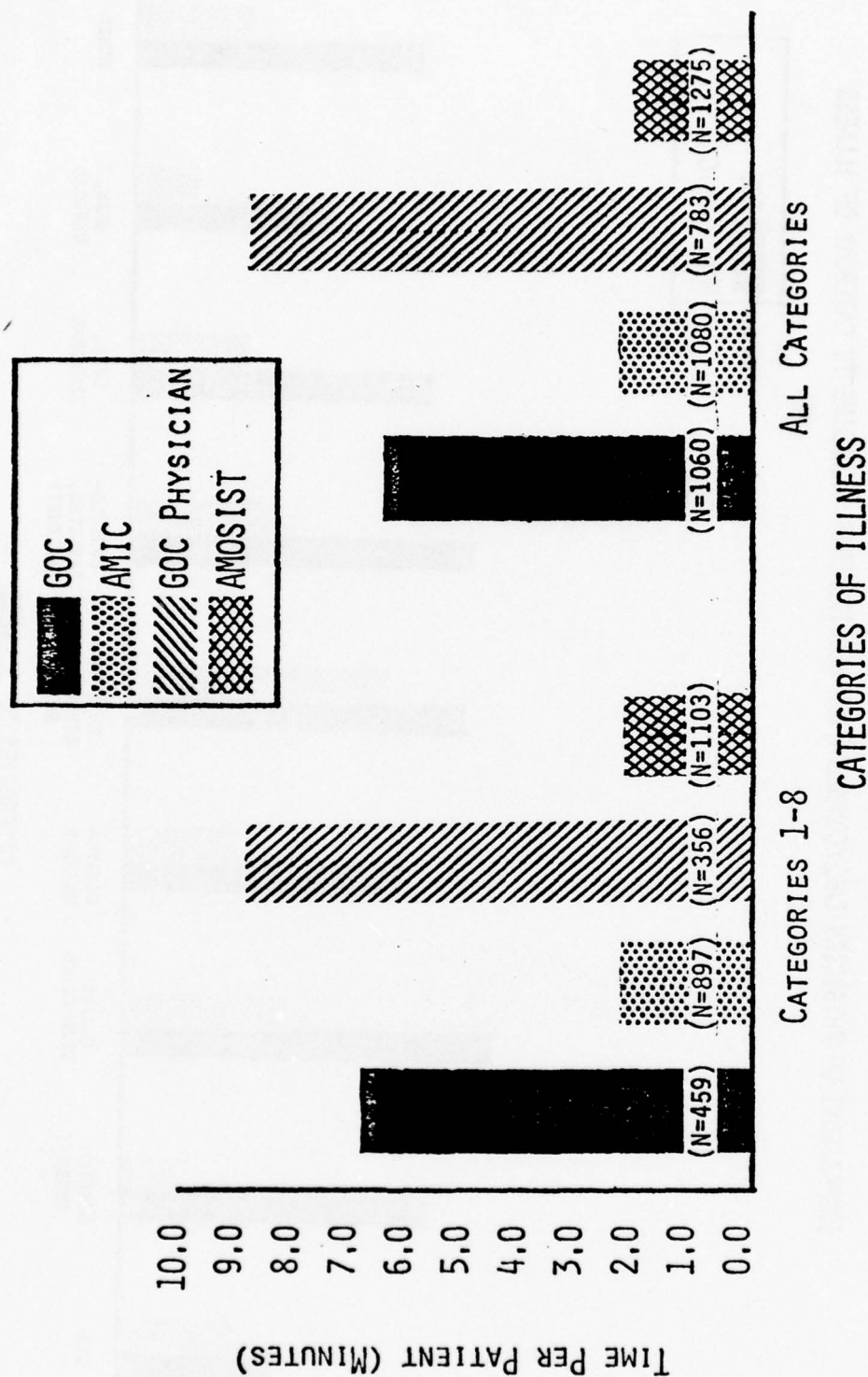
4.1.1 Non-Adjusted Data

4.1.1.1 The issue of physician savings is addressed by determining whether or not there exists a significant difference between AMICs and GOCs (and between AMOSIST's patients and GOC physicians' patients) regarding the amount of physician-rendered care/consultation provided. For each patient, the total amount of time for physician care/consultation was determined. An average physician time per patient (inclusive of patients who required no physician care/consultation, i.e., those treated solely by AMOSISTs or other non-physician care providers) was then computed for both types of clinics and categories of care providers.

4.1.1.2 The findings for the principal comparisons in the study are portrayed in Figure 3. Clearly, all differences favor AMIC/AMOSIST delivered care. As indicated in the footnote, all pairwise comparisons yielded differences which were highly significant statistically ($p \leq .0000$). This was true whether the analyses were limited to only those patients whose illnesses were classified within the eight specific illness categories employed in the

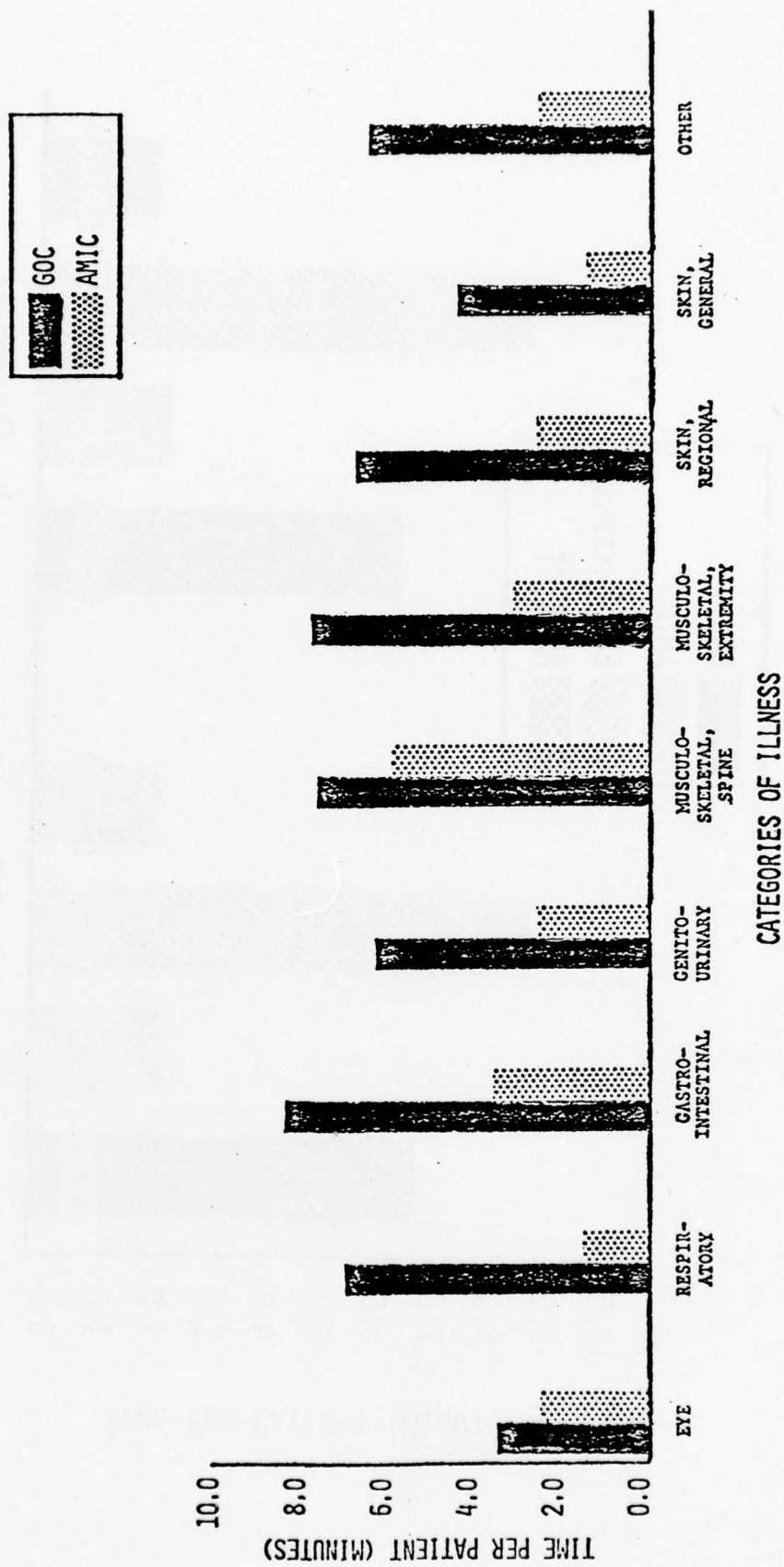
FIGURE 3

SUMMARY COMPARISONS OF PHYSICIAN CARE/CONSULTATION REQUIREMENTS^A



A. THE DIFFERENCES INDICATED IN ALL COMPARISONS, I.E., BOTH SYSTEM-WIDE (GOC VS AMIC) AND CARE-PROVIDER (GOC-PHYSICIAN VS AMOSIST) ARE SIGNIFICANT AT THE $P \leq .0000$ LEVEL.

FIGURE 4
COMPARISONS OF PHYSICIAN CARE/CONSULTATION REQUIREMENTS ACCORDING TO CATEGORY OF ILLNESS



study, or whether the patient sample was enlarged to include those whose illness was classified as "Other."

4.1.1.3 Figure 4 provides the "system-wide," GOC versus AMIC comparisons as they pertain to each of the categories of illness (to include "Other"). As is readily observed, the average amount of physician-required time is larger for GOC/GOC physician delivered care than for AMIC/AMOSIST delivered care for every category of illness. Moreover, the differences are significant at the $p \leq .0290$ level of confidence for each of the comparisons except two. The two comparisons which were not significant were for the categories "Eye" ($p = .2500$) and "Musculo-Skeletal, Spine" ($p = .5695$). (For the "care provider" level comparisons, the differences for these categories are both statistically significant at the $p = .0006$ and $p = .0290$ levels, respectively. All other categories were significantly different at the $p \leq .0000$ level of significance. Included at Appendix D is a summary table which specifies the mean, sample sizes and p-values for all comparisons.)

4.1.1.4 The information appearing in Figure 4 can also be used to determine which types of illness required the greatest amount of physician involvement. From the system-wide point of view, there exists substantial variance among the categories for both GOCs and AMICs. For the GOCs, it is the "Respiratory" and "Musculo-Skeletal" illnesses (both Spine and Extremity) which are most demanding of a physician's time. The least amount of physician involvement for GOC treated patients is encountered in illnesses of the eye and those categorized as "Skin, Regional." For AMIC treated patients, the greatest amount of physician care/consultation is clearly associated with the category "Musculo-Skeletal, Spine." All of the remaining categories require markedly less physician involvement.

4.1.1.5 Some caution should be employed by the reader in interpreting and evaluating these data due to the small size that exists in some of the categories. In particular, it is noted that there were fewer than 30 patients included in the GOC physician subsamples for the "Eye," "Genitourinary," and "Skin, General" categories of illness, and in the AMOSIST subsamples for the category "Musculo-Skeletal, Spine." Hence, the replicability of the findings for these categories are less likely to remain as stable as those with larger numbers of patients (see Appendix D) in any future study effort.

Table 2

DISTRIBUTION OF PATIENTS ACCORDING TO CATEGORY
OF ILLNESS AND TYPE OF CLINIC^a

Category of Illness	Type of Clinic	
	GOC	AMIC
Eye (1)	32	45
Respiratory (2)	113	423
Gastrointestinal (3)	69	96
Genitourinary (4)	31	128
Musculo-Skeletal, Spine (5)	48	14
Musculo-Skeletal, Extremity (6)	83	63
Skin, Regional (7)	45	75
Skin, General (8)	37	91
Other (9)	602	188
"1 - 8"	459	936
All	1061	1124

a. Chi-square significant at $p \leq .0000$ for categories 1 thru 8 as well as for categories 1 thru 9.

4.1.1.6 An issue of more general concern, however, is that of the differences which exist between the two systems of care regarding the distribution of patients within each of the categories of illness considered (Table 2). The greatest disparities were evidenced in the categories "Respiratory" (GOC = 113 patients, AMIC = 423 patients) and "Other" (GOC = 602 patients, AMIC = 188 patients). Overall, the chi-square analysis were highly significant ($p \leq .0000$). While such differences do not affect the results of the present "by-category-of-illness" analyses, it was likely that they might have had a substantial impact upon the summary comparisons which have been performed. Accordingly, additional analyses were undertaken to determine to what extent, if any, the results have been affected by these differences.

4.1.1.7 The resources were not available to permit additional data to be collected. Hence, in lieu of this option the tactic employed was to artificially create an enlarged GOC sample which (a) was approximately equal in total size to that of the AMIC, and (b) had approximately the same number of patients in each category of illness as did the AMIC sample.* While this approach is clearly not as desirable as obtaining, additional, patient data for each of the categories, it at least represents a reasonable and plausible alternative to ignoring the issue. The results of these efforts created two samples approximately equal size (GOC = 913 patients, AMIC = 936 patients) for which the chi-square analysis was non-significant ($p = .4718$). Using this expanded GOC sample the system-wide comparison of physician care/consultation requirements for category "1-8" patients continued to evidence a highly significant difference ($p \leq .0000$) between GOC delivered care (6.50 minutes per patient) and AMIC delivered care 2.26 minutes per patient). (A highly significant difference was similarly evidenced when the samples were expanded to include category "Other.")

*This technique involves the process of redundantly utilizing existing data and/or randomly sampling among existing data in order to achieve the desired number of cases. For example, in the "Respiratory" category, the GOC population was duplicated approximately four times to obtain approximate equivalence to that of the AMIC sample, and only about 30 percent of all of the GOC "Other" sample were randomly selected for inclusion in the comparison with the smaller AMIC sample.

4.1.2 Disposition — Adjusted Data

4.1.2.1 A factor which has not yet been considered, but one which is relevant to the issue of physician savings is that of the disposition of the patients from the clinic. In one sense, it is a factor which is extraneous to the clinics being considered; i.e., once the patient leaves the AMIC or GOC and is referred to a specialty clinic for further evaluation or treatment, there is no further AMIC/GOC time which can be directly ascribed to that patient. However, in evaluating the impact of these two types of clinics from a more distanced perspective, it is logical to consider the possible effects of differences in the extra-clinic referral rates between the two types of clinics. To illustrate what is meant, if the AMIC was able to complete the evaluation and treatment of only 10 percent of the patients passing through it, and had to refer the remaining 90 percent to specialty clinics to complete their treatment (and the reverse condition prevailed at the GOC), it is likely that the overall impact of the AMIC upon the hospital's health care delivery system would be less desirable than that of the GOC in terms of the overall physician savings effected even though the AMIC's "in-house" operation was found to result in a physician savings. In other words, given the exaggerated example cited, if these hypothetical data were considered from a more global (hospital-wide) perspective, the amount of time subsequently required by AMIC patients receiving physician care in various specialty clinics would, in all likelihood, reverse whatever advantage had been previously claimed by the AMOSIST program regarding the total physician time required per patient.

4.1.2.2 The findings of the present study do evidence a significant difference (chi-square $\leq .0000$) between these types of clinics; however, the direction is opposite to that given in the example cited, i.e., the rate of referral to specialty clinics was higher for the GOC (52.5%) than it was for the AMIC (37.1%). Hence, the effect of considering the disposition factor is to enlarge the already existing difference in physician care provider time between AMIC/AMOSIST delivered care and GOC/GOC physician delivered care, not to decrease it or reverse the direction.

4.1.2.3 The analyses undertaken to determine the actual magnitude and significance of the increase were identical to those described previously regarding the evaluation of physician savings and cost effectiveness with the exception of an adjustment (an addition) that was made for each patient referred to a specialty clinic to reflect the anticipated additional physician time required to treat the patient. Given the absence of any other available estimate as to what magnitude of these additions should be in these settings, the mean time associated with the GOC physician delivered

care for the analysis which included patients from all categories of illness was employed. Hence, for patients in the present study whose care was not complete within the clinic, i.e., for all those referred to specialty clinics, a total of 8.44 minutes (Appendix E) was added to the total physician care/consultation time. (Hereinafter, these adjusted data will be referred to as "disposition-adjusted" data.)

4.1.2.4 Figure 5 depicts the summary comparisons of these disposition-adjusted data for physician care/consultation requirements. All differences shown between GOC/GOC physician delivered care and AMIC/AMOSIST delivered care (ranging from 4.71 to 7.42 minutes per patient) were statistically highly significant ($p \leq .0000$).

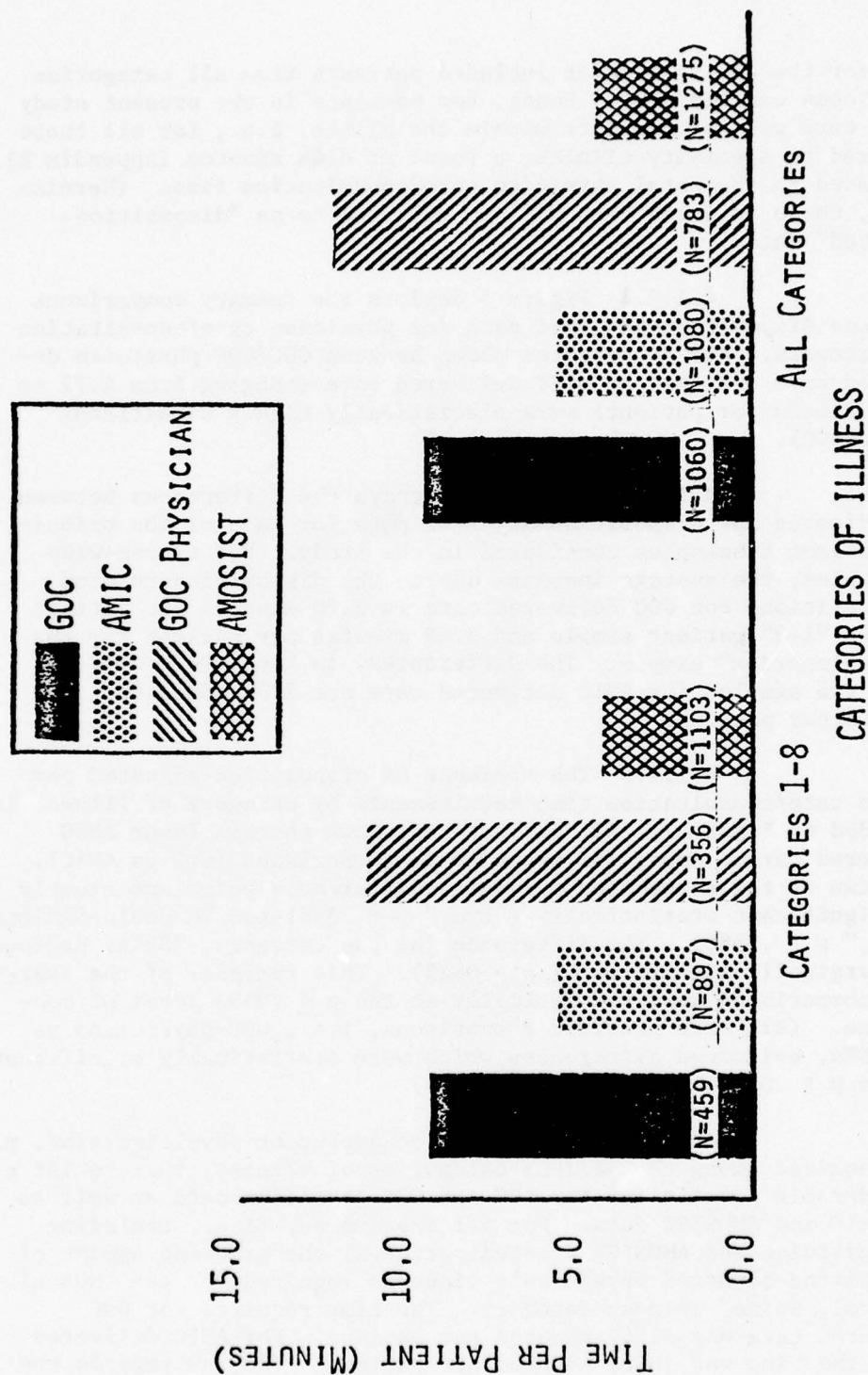
4.1.2.5 Figure 6 portrays the differences between non-adjusted and disposition-adjusted data for each of the principal patient subsamples considered in the study. For system-wide subsamples, the average increase due to the disposition-related considerations for GOC delivered care is 3.20 minutes per patient for the "1-8" patient sample and 3.49 minutes per patient for the "All categories" sample. The differences, in the same order, for these two samples for AMIC delivered care are 2.84 and 2.92 minutes per patient.

4.1.2.6 The breakout of disposition-adjusted physician care/consultation time requirements by category of illness is provided in Figure 7. All differences shown therein favor AMIC delivered care. Among the system-wide comparisons (GOC vs AMIC), only two of the categories evidenced differences which are clearly non-significant statistically ("Eye," $p = .5581$ and "Musculo-Skeletal, Spine," $p = .5589$). The difference for one category, "Skin, Regional," was marginally significant ($p = .0675$). This reminder of the system-wide comparisons were statistically at the $p \leq .0333$ level of confidence. (All care provider comparisons, i.e., GOC-physicians vs AMOSISTs, evidenced differences which were statistically significant at the $p \leq .0102$ level of confidence.)

4.1.2.7 As regards the amount of physician time, per se, required among the various categories of illness, there exist a considerable parallelism for GOC and GOC physician data as well as for AMIC and AMOSIST data. For all subsamples, (i.e., including GOC physician and AMOSIST treated patients) the greatest amount of disposition-adjusted physician's time was required for the "Musculo-Skeletal, Spine" illness category. The time required for GOC delivered care was 12.47 minutes per patient. For AMIC delivered care, the time was 10.61 minutes per patient. Too, as regards the

FIGURE 5

SUMMARY COMPARISONS OF DISPOSITION-ADJUSTED PHYSICIAN CARE/CONSULTATION REQUIREMENTS^A



A, THE DIFFERENCES INDICATED IN ALL COMPARISONS, I.E., BOTH SYSTEM-WIDE (GOC VS AMIC) AND CARE-PROVIDER (GOC-PHYSICIAN VS AMOSIST) ARE SIGNIFICANT AT THE $P \leq .0000$ LEVEL.

FIGURE 6

SUMMARY COMPARISONS OF NON-ADJUSTED AND DISPOSITION
ADJUSTED PHYSICIAN CARE/CONSULTATION REQUIREMENTS

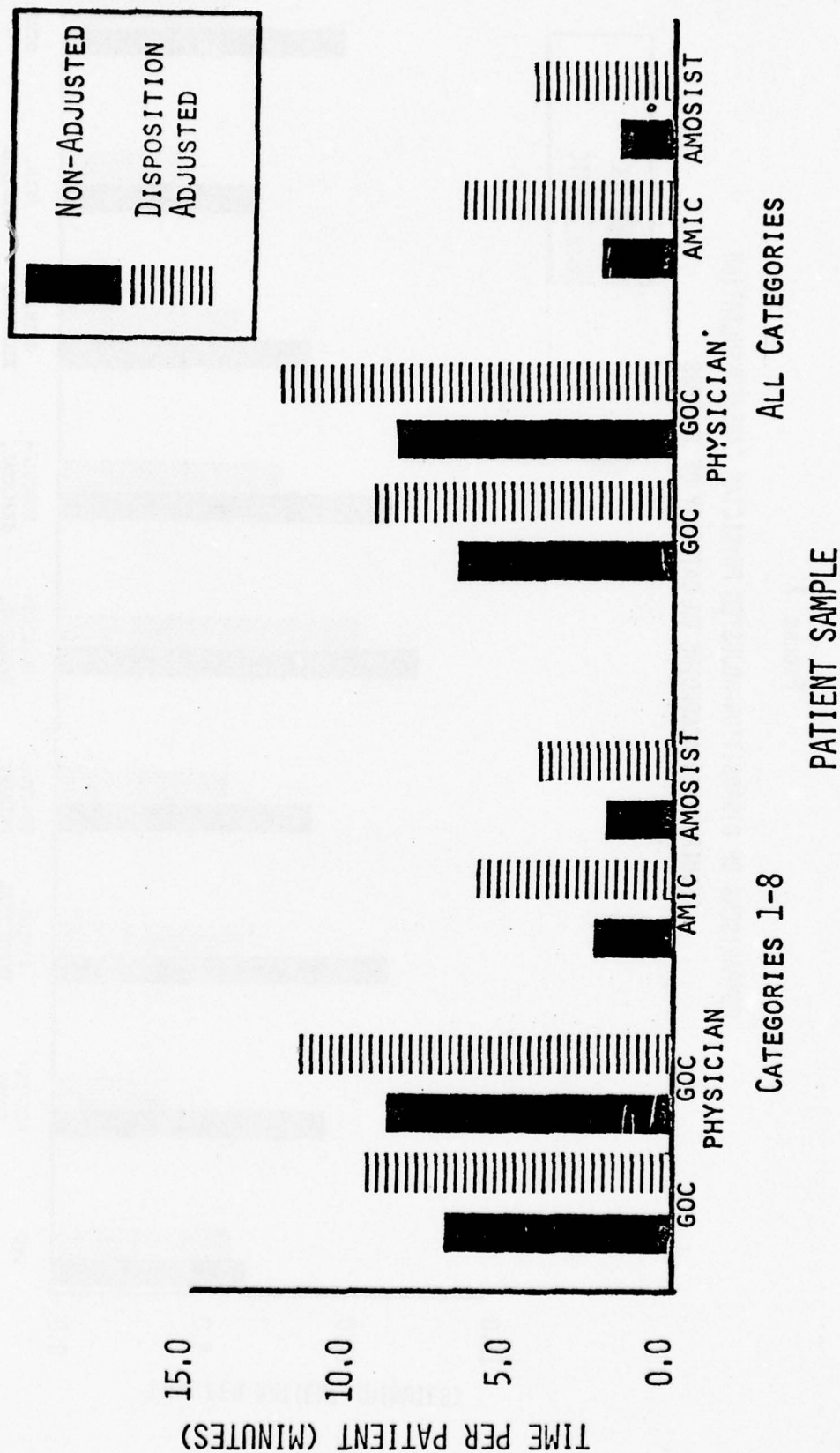
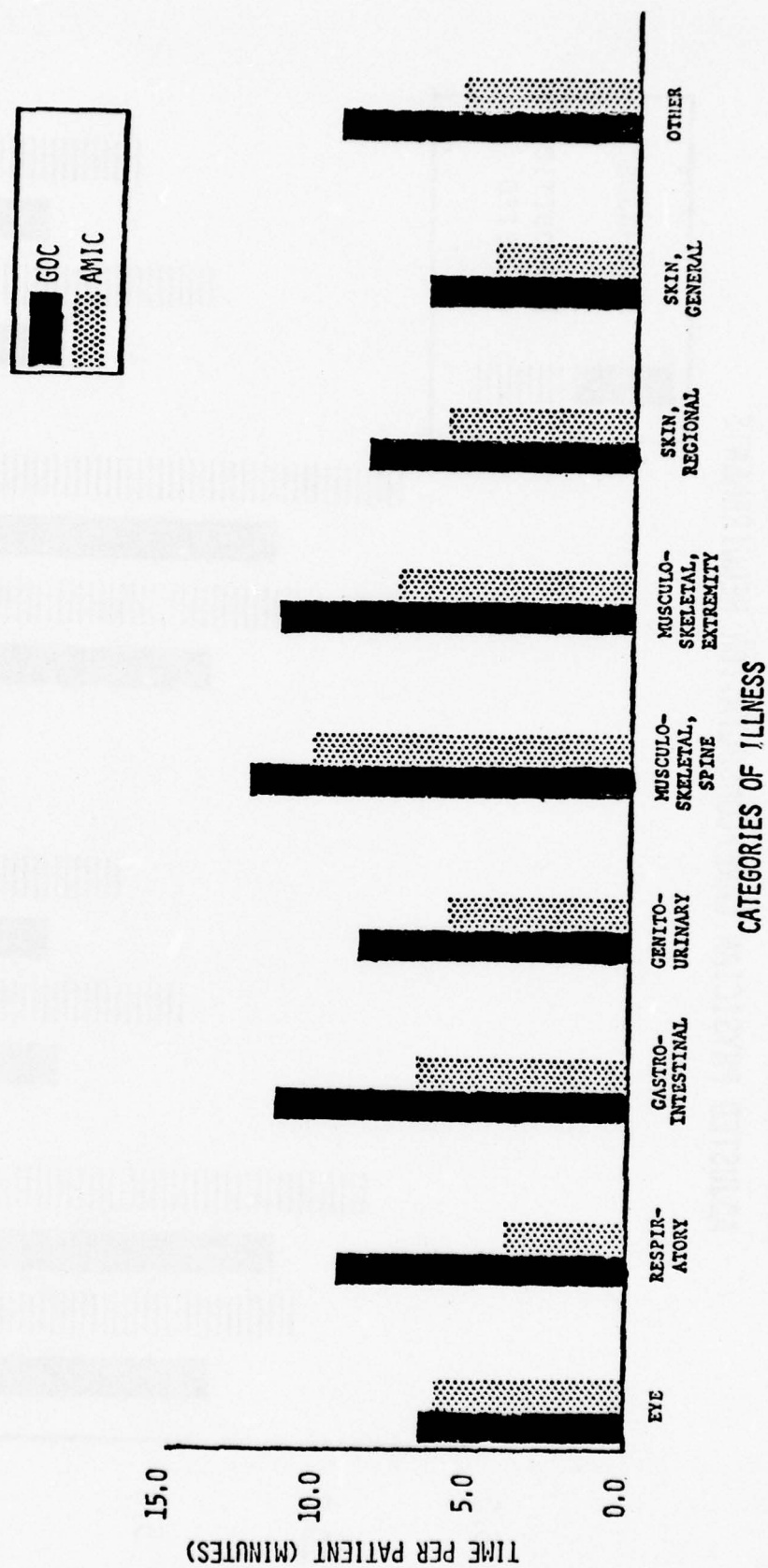


FIGURE 7
COMPARISONS OF DISPOSITION-ADJUSTED PHYSICIAN CARE/CONSULTATION
REQUIREMENTS ACCORDING TO CATEGORY OF ILLNESS



categories requiring the least amount of care, the category "Skin, General" was common to both the AMOSIST Program and its more traditional counterpart. The time requirement for GOC delivered care was 6.88 minutes per patient, while the corresponding time for AMIC delivered care was 4.48 minutes per patient. At the lower end of the scale, however, there was another category of illness for each type of health care delivery system which evidenced time requirements quite similar to those already listed. For GOC delivered care, this additional "low-time-requirement" category was the "Eye" category (6.62 minutes per patient), and for the AMIC delivered care it was the "Respiratory" category (4.15 minutes per patient). Specific times are provided for all subsamples in Appendix F. However, the reader is again cautioned that the sample size for several of the categories is small.

4.1.2.8 The findings of a substantial difference in the referral rates between AMICs and GOCs is an interesting one. It suggests that the two patient populations being addressed by the AMIC and the GOC are different; that patients being seen in a GOC may be suffering relatively more severe injuries or ailments than those being seen in an AMIC. Such a finding is a rather two-edged one. In one sense, this finding reflects well upon the AMOSIST Program's triage system as it was employed at these sites, i.e., that these sites are properly selecting only those patients (patients with acute minor illness) who could be most effectively dealt with in an AMIC. On the other hand, as regards the physician care/consultation time requirement comparisons which are presently being addressed, the suggestion that the GOC's higher referral rate is due to the existence of more severely distressed patients is one which potentially biases the analyses. Unfortunately, the overall magnitude of the direction of the bias cannot be readily asserted on the basis of the findings presented. Neither is it possible, on the basis of the data presently being considered, to make determinations of the severity of illness which each patient suffered. Hence, a definitive response to the question of whether or not GOC treated patients suffer more (or less) severe illnesses than AMIC treated patients cannot be effected. Nevertheless, it is possible to more closely examine the "referred" and "non-referred" patients as separate subsamples to determine if GOC referred patients require differentially more time than AMIC referred patients. To answer this question, the data was subjected to a two-way analysis of variance (ANOVA) using the "1-8" patient sample to determine if the disposition by site interaction term was significant.

4.1.2.9 The analysis shows the interaction is not significant ($p = .191$). Hence, aside from the severity-of-illness considerations, it is apparent that the overall, relatively larger increase associated with GOC delivered care (versus that associated with AMIC delivered care) is not attributable to a differentially greater increase in requirements associated with care rendered to GOC patients who are referred to specialty clinics, but that the overall increase in disposition-adjusted care is simply associated with the greater increase of referrals within the GOC patient sample. Stated in other words, the analyses indicated that the differences between non-referred patients for GOC and AMIC patients (3.93 minutes) is not significantly different than the corresponding difference for referred patients (4.18 minutes). (The results were similarly non-significant when the sample was enlarged to include the category "Other," i.e., $p = .627$ for the interaction term.)

4.1.3 Patient Contact Time and Total Accountable Time

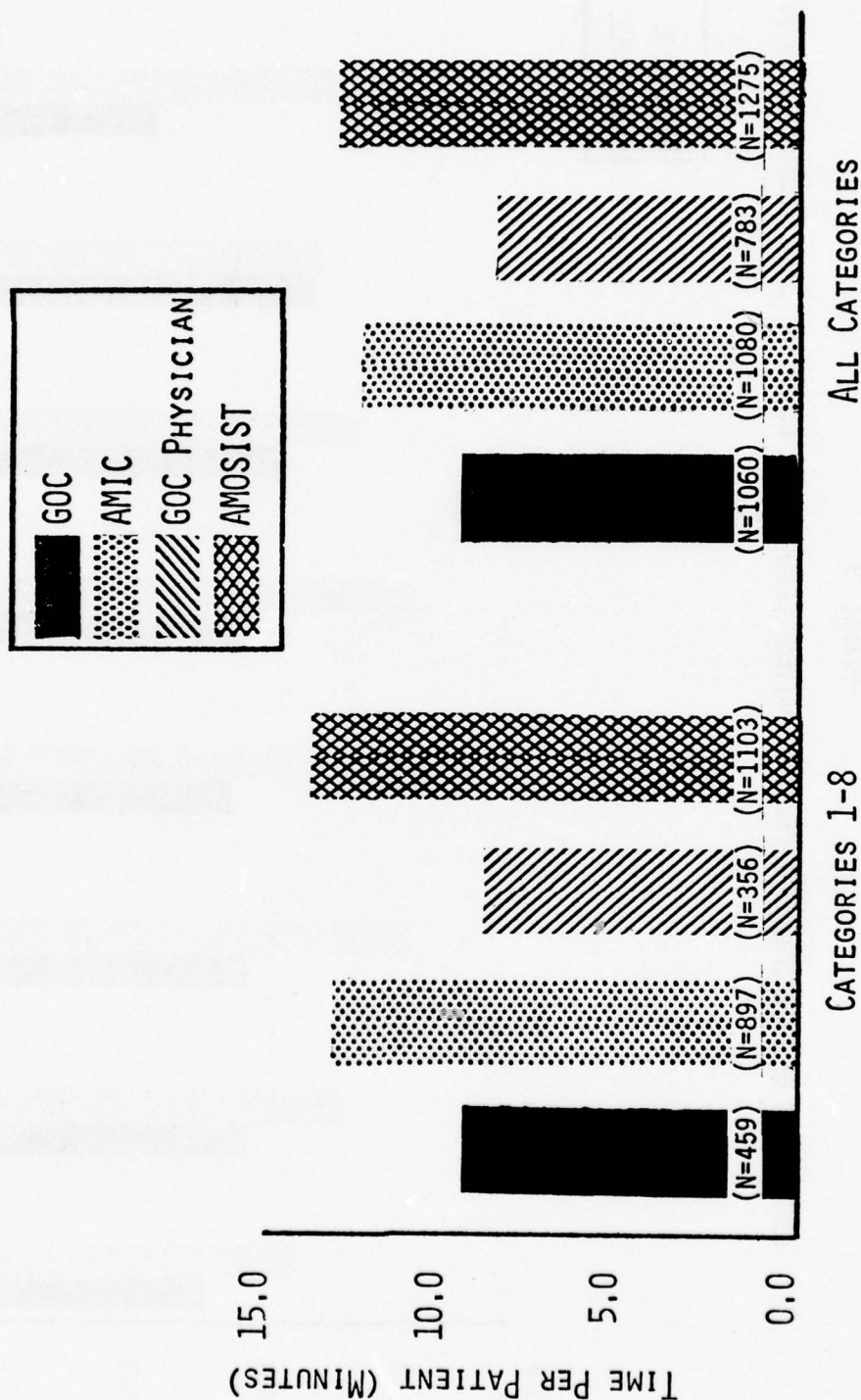
4.1.3.1 Although not germane to the cited objectives of the study, it is believed appropriate to briefly address two additional care provider time parameters. The analyses just presented have focused solely upon the amount of physician time required to examine and treat a patient who has sought care in the clinics which have been included in the study. They do not address either (a) the total amount of direct patient contact time required of the principal care provider, or (b) the total accountable care provider time associated with the delivery of care to a patient. For patients treated by physician extenders, at least, such times are markedly higher than the physician-rendered component previously described.

4.1.3.2 The first of the two parameters cited is labelled "Total Patient Contact Time" and is simply the sum of all of the principal care provider's direct contact time with the patient. The second of these two is labelled "Total Accountable Care Provider Time" and includes not only the times spent by the principal care provider in direct contact with the patient, but also (a) the time spent by the same care provider in both waiting for and obtaining any needed physician consultation, and (b) the time required by the physician to render whatever consultation is needed.

4.1.3.3 The results of these analyses performed upon these patient contact time data are depicted in Figures 8 and 9. The summary comparisons (Figure 8) clearly indicated that AMIC- and AMOSIST-delivered care requires a significantly greater amount of patient contact time than does GOC or GOC physician delivered care. All such comparisons are significant at the $P \leq$ level of confidence. The

FIGURE 8

SUMMARY COMPARISONS OF PRINCIPAL CARE PROVIDERS PATIENT CONTACT TIME^A

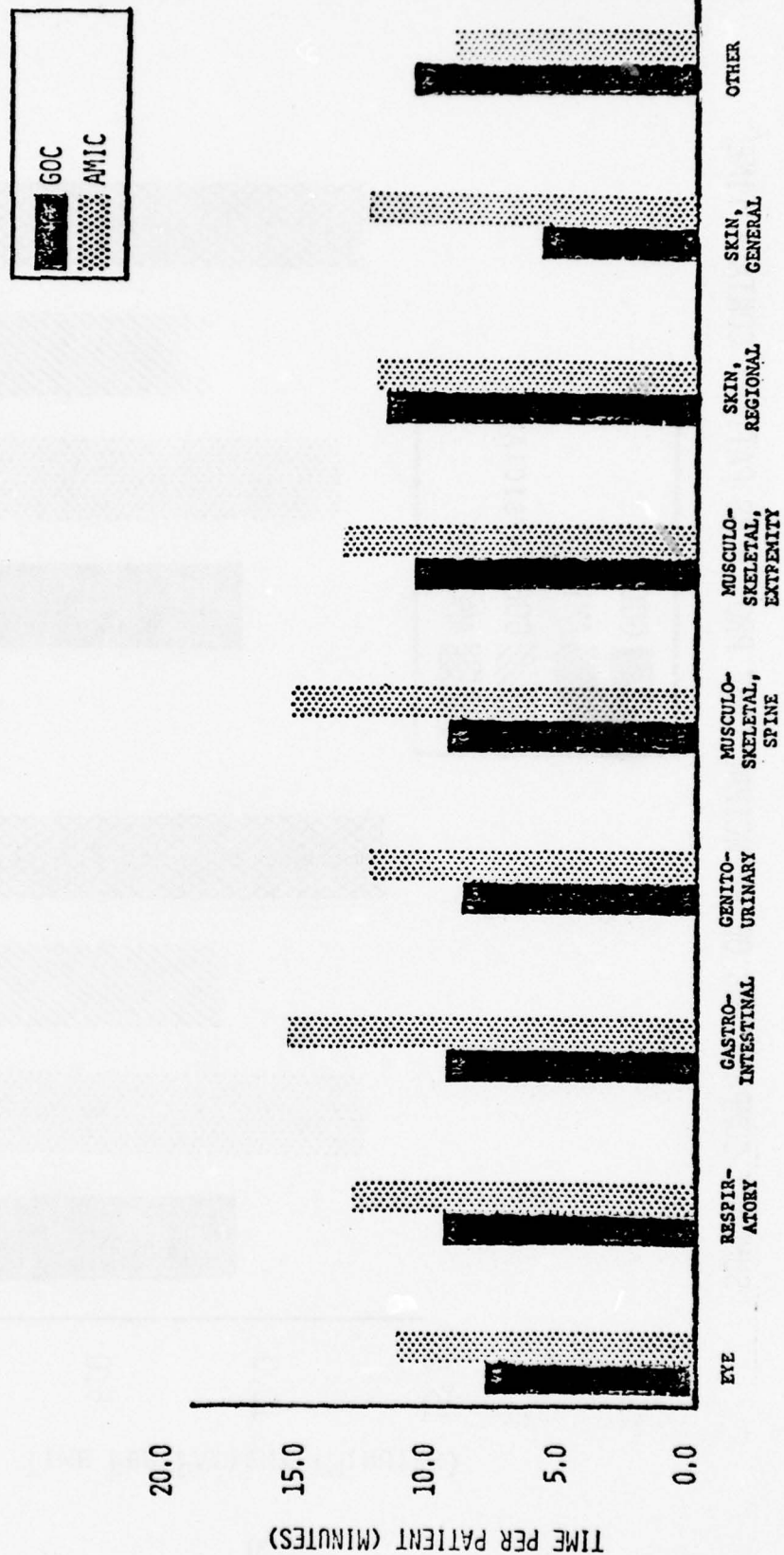


CATEGORIES OF ILLNESS

A. THE DIFFERENCES INDICATED IN ALL COMPARISONS, I.E., BOTH SYSTEM-WIDE (GOC VS AMIC) AND CARE-PROVIDER (GOC-PHYSICIAN VS AMOSIST) ARE SIGNIFICANT AT THE $P \leq .0000$ LEVEL.

FIGURE 9

COMPARISONS OF PRINCIPAL CARE PROVIDER PATIENT CONTACT TIME ACCORDING TO CATEGORY OF ILLNESS



findings, when shown by the category of illness, Figure 8, also evidence statistically significant differences for most of the system-wide (and care provider comparisons).

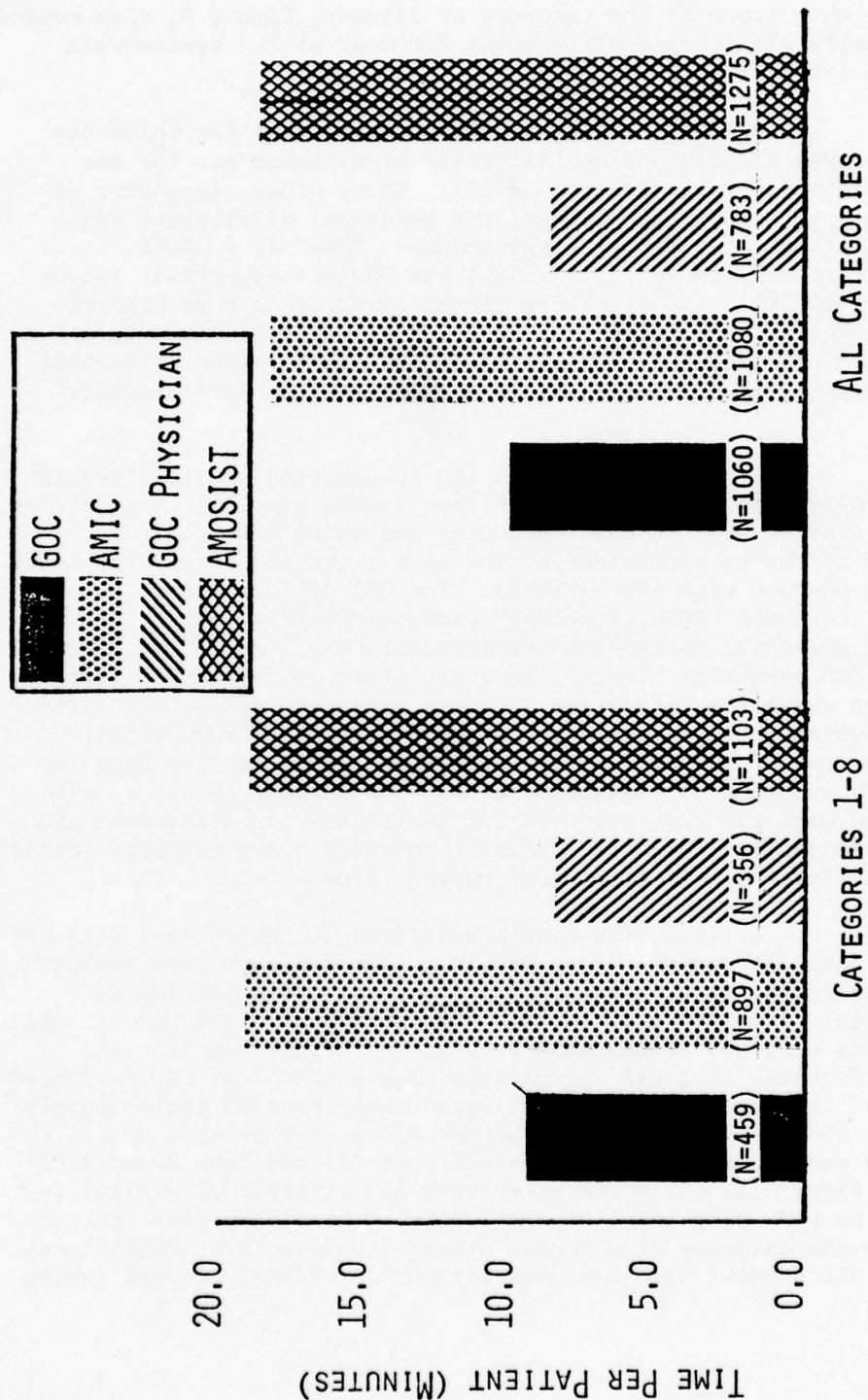
4.1.3.4 The system-wide comparisons for which the difference was clearly not statistically significant was for the "Skin, Regional," category ($p = .8702$). Three other categories of illness among the GOC-AMIC comparisons evidenced differences which were of marginal statistical significance: "Eye" ($p = .0805$, "Musculo-Skeletal, Spine" ($p = .0583$) and "Musculo-Skeletal, Extremity" ($p = .0536$). All of the remaining comparisons were significantly different at $p \leq$ level of confidence. At Appendix G is a table which provides the particulars (mean, sample sizes, p-values) for all of the comparisons to include those at the "care-provider" level.

4.1.3.5 As before, the information provided regarding the individual categories of illness can be examined to determine which categories are the most demanding and which are the least demanding of the care provider's time (i.e., the amount of time spent in direct contact with the patient). For GOC delivered care in general, it is the "Skin, Regional" category that is ranked highest. The least demanding categories are those of "Eye," and "Skin, General." (For the GOC physician himself, however, there is relatively little difference among the categories with the exception of the two categories requiring the smallest amount of time: "Eye" and "Skin, General," re: Appendix G.) The high's and low's are the same for both AMIC and AMOSIST delivered care. The largest amount of time associated with the care rendered for gastrointestinal ailments and the two categories of musculo-skeletal injuries. The category "Other" demand the least amount of patient contact time.

4.1.3.6 The findings (Figure 10) which deal with the issue of total accountable care provider time are even more emphatic in portraying the relative rapidity of GOC and GOC physician delivered care vis-a-vis that of AMIC and AMOSIST delivered care. All comparisons depicted within this figure show highly significant, large differences in total accountable time in favor of GOC delivered care. For the most part, AMIC delivered care requires approximately twice the amount of accountable care provider time as does GOC delivered care. As regards the category-of-illness considered separately, Figure 11, the differences were all statistically significant at the $p \leq .0135$ level of confidence. The differences are the least for the category of illness "Other" (therein AMIC/AMOSIST care requires 31% greater time) and the largest for "Skin, General" (which

FIGURE 10

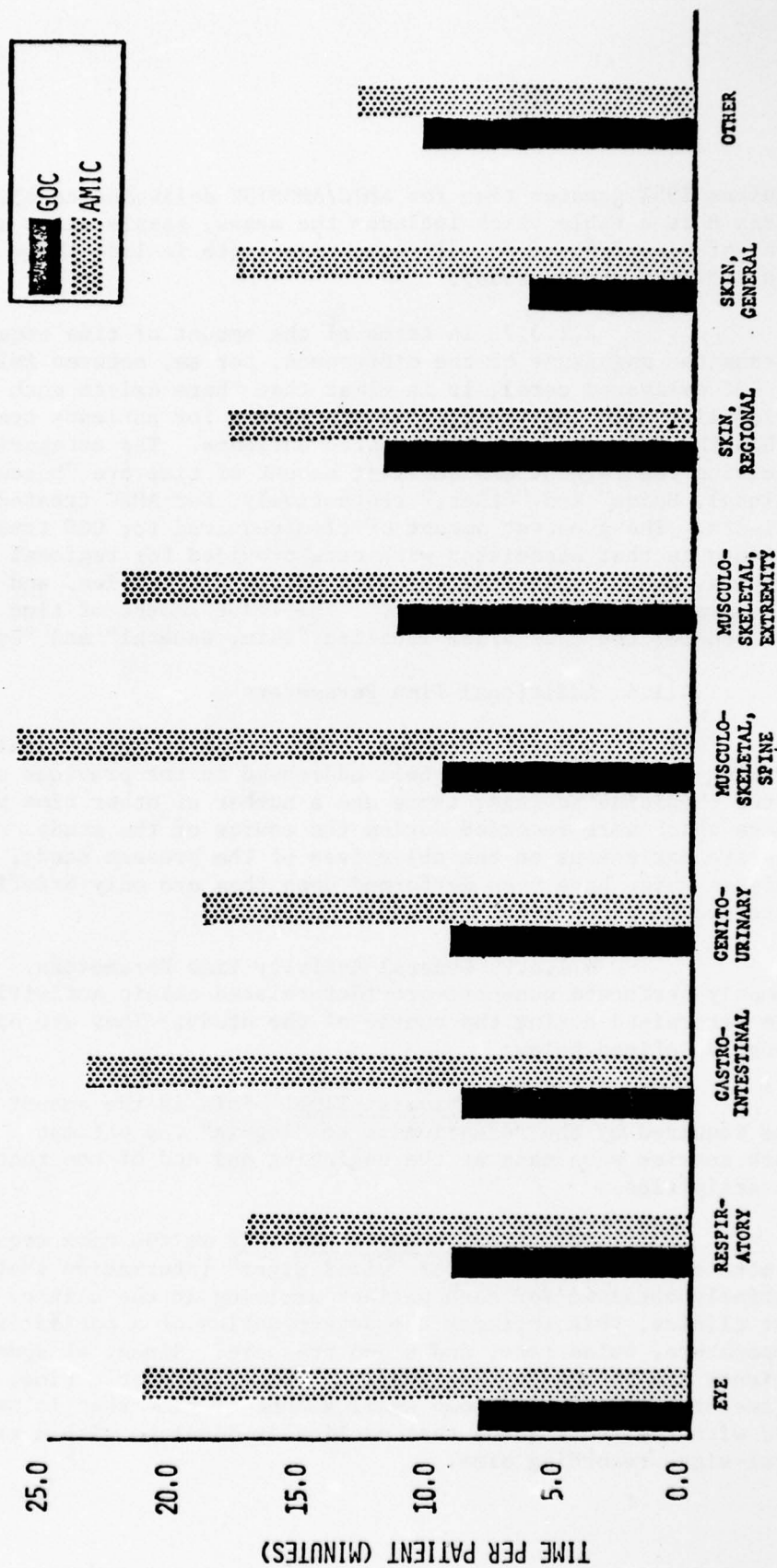
SUMMARY COMPARISONS OF TOTAL ACCOUNTABLE CARE PROVIDER TIME



A. THE DIFFERENCES INDICATED IN ALL COMPARISONS, I.E., BOTH SYSTEM-WIDE (GOC VS AMIC) AND CARE-PROVIDER (GOC-PHYSICIAN VS AMOSIST) ARE SIGNIFICANT AT THE $P \leq .0000$ LEVEL.

FIGURE 11

COMPARISONS OF TOTAL ACCOUNTABLE CARE-PROVIDER TIME PER PATIENT ACCORDING TO CATEGORY OF ILLNESS



requires 195% greater time for AMIC/AMOSIST delivered care). Appendix H is a table which includes the means, sample sizes and level-of-significance for all comparisons (to include those for care provider comparisons).

4.1.3.7 In terms of the amount of time required (versus the magnitude of the difference, per se, between AMIC and GOC delivered care), it is clear that there exists much more variability among the categories of illness for patients treated within the AMIC than for GOC treated patients. The categories requiring the largest and smallest amount of time are "Musculo-Skeletal, Spine" and "Other," respectively, for AMIC treated patients. The greatest amount of time required for GOC treated patients is that associated with care provided for regional skin ailments, musculo-skeletal injuries to the extremities, and those illnesses categorized as "Other." The least amount of time is required for the categories labelled "Skin, General" and "Eye."

4.1.4 Additional Time Parameters

4.1.4.1 General. Albeit the principal analyses deriving from the data have been addressed in the previous section on the physician savings, there are a number of other time parameters which were recorded during the course of the study. Since they are extraneous to the objectives of the present study, the analyses which have been performed upon them are only briefly addressed in the present section.

4.1.4.2 General Activity Time Parameters. Several commonly performed non-care-provider-related clinic activities were determined during the course of the study. They are operationally defined below:

(1) Receptionist Time. This is the amount of time required by the receptionist to "log-in" the patient. Time clock entries were made at the beginning and end of the receptionist activities.

(2) Vital Sign Time. This is the time required to obtain and record whatever "vital signs" information that was routinely obtained for each patient arriving at the clinic. At most clinics, this includes the determination of a patient's temperature, pulse rate, and blood pressure. Since, at some sites, patients are called to the area/room two or more at a time, this parameter also includes some small amount of time that is associated with the short queue that cyclically develops within each vital-signs recording area.

(3) Patient Waiting Time. This is the duration of time the patient has to wait following the completion of his initial contact with the clinic (i.e., either completion of the receptionist's "log-in" activity or completion of the assessment and recording of his vital signs--whichever occurs first) until he was first seen for evaluation/treatment by one of the clinic care providers. This time was operationally defined as the interval between the time clock entry associated with the completion of the initial contact activity and the time clock entry made by the clinic care provider immediately prior to the time the care provider began to address the patient regarding his illness in the office/examination room.

(4) Total Clinic Time. This is the total amount of time that the patient spent in the clinic obtaining care that day. It began with the time of his first contact with the clinic (at either the receptionist's desk or at the vital sign recording area) and ended at the time he left the clinic for the last time that day. (The latter time was the time at which the patient received the post-treatment portion of the questionnaire used to assess patient satisfaction. It did not include the time required for him to complete same.

The mean values for each of these measures are presented for each site in Table 3.

4.1.4.3 Care Provider Activity Time Parameters. In addition to the time parameters described above, there are several parameters which are more closely linked to care provider activities. These are described and operationally defined below: The data for each are described in Table 4.

(1) Initial Patient Contact Time. This is the amount of time associated with the principal care provider's initial contact time with the patient. It is operationally defined as beginning immediately prior to the time the care provider begins to address the patient's illness (the care provider requests the patient's time card and places it in the time clock) and ending at the time patient contact is broken, e.g., for reason of completion of treatment, the care provider's departure for consultation, or the patient's departure for laboratory work or x-ray.

(2) Consultation Waiting Time. This is the time required by a non-physician care provider to obtain access to a physician for the purpose of requesting assistance/consultation. It is operationally defined as beginning at the time the principal care provider breaks contact with the patient and ending at

Table 3

CLINIC OPERATING TIME PARAMETERS ACCORDING TO CLINIC^a

SITE		RECEPTIONIST'S TIME	VITAL SIGNS RECORDING TIME	PATIENT WAITING TIME	TOTAL CLINIC TIME
AMIC #1	\bar{X}	3.64 ^b	3.42	37.65	64.73
	SD	1.83	1.58	27.34	44.10
	N	675	688	734	752
AMIC #2	\bar{X}	0.22	2.84	28.64	55.50
	SD	0.88	1.91	20.50	36.13
	N	605	282	623	611
AMIC #3	\bar{X}	0.99	4.07	30.96	53.44
	SD	0.78	1.41	17.01	26.03
	N	525	498	531	518
GOC #1	\bar{X}	0.37	2.92	45.20	65.67
	SD	0.82	1.70	26.19	33.64
	N	610	515	551	538
GOC #2	\bar{X}	1.57	2.29	26.69	48.52
	SD	1.47	1.73	21.78	34.46
	N	366	359	359	352
GOC #3	\bar{X}	0.52	1.97	31.04	49.20
	SD	0.86	1.31	23.20	34.57
	N	350	305	312	301
All	\bar{X}	1.31	3.06	34.11	57.78
	SD	1.76	1.74	24.06	36.65
	N	3131	2647	3110	3072

a. Times are expressed in minutes per patient.

b. The receptionist desk at this site also included a preliminary triage decision-making procedure; hence, the time is longer.

Table 4

CARE PROVIDER TIME PARAMETERS ACCORDING TO SITE^a

SITE		INITIAL PATIENT CONTACT TIME	CONSULTATION WAITING TIME	CONSULTATION TIME	ADDITIONAL PATIENT CONTACT TIME	TOTAL PRINCIPAL CARE PROVIDER CONTACT TIME	TOTAL ACCOUNTABLE CARE PROVIDER CONTACT TIME
AMIC #1	\bar{X}	10.11	2.52	6.99	6.53	12.17	13.19
	SD	7.16	2.89	6.90	6.59	8.69	10.79
	N	849	121	128	234	804	801
AMIC #2	\bar{X}	6.94	7.53	4.41	3.60	11.56	17.02
	SD	5.54	7.85	5.39	3.74	8.37	15.09
	N	666	310	321	441	603	599
AMIC #3	\bar{X}	7.57	6.19	2.36	4.26	12.99	19.05
	SD	5.43	5.79	2.35	4.00	8.71	11.63
	N	535	380	373	403	477	477
GOC #1	\bar{X}	7.97	2.21	5.29	5.33	10.83	11.11
	SD	7.16	6.25	6.65	5.20	10.20	10.83
	N	621	37	37	133	484	483
GOC #2	\bar{X}	9.71			9.21	10.22	10.22
	SD	7.95			9.31	8.15	8.15
	N	418			24	364	364
GOC #3	\bar{X}	7.66			7.05	6.65	6.65
	SD	6.63			5.19	6.26	6.26
	N	354			15	212	212
All Clinics	\bar{X}	8.41	5.98	3.94	4.69	11.32	13.74
	SD	6.79	6.60	4.98	4.95	8.81	11.98
	N	3443	848	859	1250	2944	2936

a. Times are expressed in minutes per patient.

the time immediately prior to the moment he is able to address the physician regarding the patient. The care provider obtains an entry from the time clock on the patient's time card at the time he leaves his exam room, carries the patient's time card with him and places it in the physician's time clock immediately prior to beginning to speak with him regarding the patient (i.e., merely at the time he enters the physician's office/exam room--since, at least at AMIC sites, there often existed a small queue of AMOSIST awaiting consultation inside the physicians office).

(3) Consultation Time. This is the duration of the time spent with the physician in consultation concerning a non-physician care provider's patient. Operationally, it begins at the time the non-physician care provider begins to speak with the physician regarding his, the "consultee's," patient (i.e., the second time clock entry described in the preceding paragraph and ends at the time when such consultation is ended. At the latter point, the non-physician care provider inserts his patient's time card in the physician's time clock at the conclusion of the consultation, returns to his own office/exam room, reinserts the patient's time card into his own time clock and continues the evaluation of the patient.

(4) Additional Patient Contact Time. This is the sum of the duration of the principal care provider's patient contact time(s) which follows any initial patient contact, e.g., patient contact times following consultation with other care providers or after the return of a patient subsequent to a patient's absence to obtain requested laboratory work or x-ray. Time clock entries are made at the beginning of the re-initiation of contact between the care provider and the patient, and at the end of such contact.

(5) Total Patient Contact Time. This is simply the sum of the initial contact time and all additional contact times between the patient and his principal care provider. (System-wide statistical comparisons regarding this measure were presented earlier, Figure 9).

(6) Total Accountable Care Provider Time. This is the sum of all care provider time(s) which is (are) associated with the delivery of care to a patient. It is the sum of the Initial Patient Contact Time, the Consultation Waiting Time, the amount of Consultation Time required (i.e., the amount of time involved for both the "consultee" and the physician providing the consultation), and the sum of all additional patient contact time(s) between the principal care provider and his patient. In this regard, it is noted that the time spent by a physician in

process of providing consultation is ascribed to the consultee's patient, not his own (i.e., if the outgoing evaluation/treatment of a physician's patient were interrupted by a requested consultation, the physician's time spent in performing that interrupted consultation would not be "charged" to his own patient). (System-wide statistical comparisons regarding this measure were presented earlier, Figure 10).

4.2 Cost Effectiveness

4.2.1 General

4.2.1.1 The evaluation of the cost effectiveness of the AMOSIST program focuses upon an analysis of the care-provider's salary costs associated with the delivery of care. Absent from consideration, therefore, are the costs associated with possible differences among sites regarding installation overhead, operational costs associated with possible differences in the medication prescribed and use of laboratory tests and x-rays, and salary-related costs associated with possible differences in the number of non-primary care providers working in the clinic (i.e., receptionist's, clerk, corpsmen, and or nurses who obtain and recorded vital signs or performed other ancillary clinic functions).

4.2.1.2 The elimination of installation overhead and operational costs from consideration in the present analysis is believed appropriate since they represent factors which are largely independent of, and extraneous to the impact, if any, of the presence or absence of AMOSISTS within a clinic. Much of the same rationale can be employed regarding the deletion of ancillary, non-care providing personnel from consideration (e.g., receptionists and/or clerks). As regards nursing personnel, their efforts were incorporated into the present data when they functioned in the role of primary care providers (e.g., as nurse practitioners), but not when they performed activities which were supervisory or administrative in nature. Neither were their activities recognized when they served as assistants to primary care providers (i.e., to physicians in GOCs). (The lack of consideration of nursing personnel serving in this last described role does, it is noted, introduce some unknown amount of bias into the data--a bias which favors GOC and GOC physician delivered care.)

4.2.1.3 The absence from consideration of possible differences in the costs associated with medications prescribed and diagnostic tests performed are likely to be of more significance. Nonetheless, data recently published from the ongoing clinical validation study at the AMIC at Brooke Army Medical Center (Tompkins, et al, 1977) suggest that the absence from consideration of these

factors in the present study may add further bias in favor of GOC/GOC physician delivered care. In that study, a study which was confined to respiratory illnesses, it was determined that medication/diagnostic costs associated with care rendered by internists were \$0.65 per patient higher than those associated with AMOSIST rendered care. Since more than forty percent of the patients treated by AMOSIST in the present study were treated for respiratory illnesses, this possible source of bias applies to a very substantial portion of the study sample. However, it is again noted (*re Schopper, 1978*) that data derived from the BAMC AMIC may not be generalizable to other AMICs within HSC's AMOSIST Program.*

4.2.1.4 Care Provider Cost Determination. The cost to be computed and employed in the present study is the average care provider salary-related cost per patient. It is computed by multiplying the amount of time required to treat a patient (measured in fractions of an hour) by the care provider's hourly wage. The care provider's hourly wage was derived from the November 1977 Department of the Army update (DACA-FAA-C, 0822382N77) to Army Regulation (AR) 37-108. Such computations were based upon a 264 day work-year at eight hours per day. For physicians, this hourly wage subsequently adjusted by the hourly wage equivalent of the amount of (a) physician special pay (PSP) received, i.e., either \$100.00 per month or \$350.00 per month; and/or (b) Variable Incentive Pay (VIP) received, i.e., none, \$9,000.00 per year, or \$12,000.00 per year. These adjustments, too, were based upon a work year of 264 days at eight hours per day. The average hourly wage equivalent employed for each category of care provider is described below:

*The principal objections to direct extrapolation from BAMC data are that (a) the BAMC algorithms, while similar to those employed in other AMICs, are not the same, and (b) the AMOSIST at BAMC AMIC are very closely monitored, well selected personnel who receive regular, weekly, computer-generated feedback regarding their performance.

(1) Physician: Six levels of hourly wage equivalents were computed for physicians. These ranged from a low of \$10.70 per hour to a high of \$19.97 per hour. These values, and the components contributing to each, are depicted in Table 5. Also shown in that table are the approximate civil service general schedule (GS) equivalents for each level of wage depicted.

(2) AMOSIST: The average grade of AMOSISTs serving in the program at the time of the Phase II evaluation was E-5. (The average pay grade derived from the demographic data provided in the Staff Satisfaction Questionnaire was 5.08). Using the same reference and manner of conversion, the average equivalent hourly wage for an AMOSIST was determined to be \$5.05 per hour.

(3) Physician Assistant: In one AMIC, AMIC #1, patient care was rendered by PAs. The hourly equivalent wage calculated for these care providers was \$7.87. This corresponds to the rank of Chief Warrant Officer (CW2), as cited in the DA message.

(4) Nurse Practitioner: Nurse Practitioners were utilized at two of the GOC sites. Using the same reference and procedures as above, an hourly wage equivalent of \$10.13 was calculated for use in the present study for such personnel. This is the appropriate amount for the rank of Captain (03).

4.1.2.5 Cost Per Patient. The hourly wage equivalents calculated above were applied to all accountable care provider times. For the physicians (in either an AMIC or a GOC) this time is merely the sum of all direct contact time. (Should any consultation time have been recorded on the time card of a patient being cared for by a physician, that time was assumed to be consultation rendered to a subordinate. As such, that time was not "charged" to the physician's patient, rather it was charged to the physician extender's patient.) For the physician extender, (i.e., AMOSIST, PA, or Nurse Practitioner) the total accountable time consisted of the total of: (a) all time spent in direct contact with the patient (to include all time spent with the patient subsequent to any rendered intra-clinic, physician-rendered consultation or subsequent to "same-day" laboratory or x-ray service), (b) all time spent in waiting for and obtaining any required physician-rendered consultation, and (c) all time required by the physician to provide the requested consultation. The cost for each patient's visit was computed by determining the total number of accountable man-hours of care for each category of care provider involved in a patient's care, multiplying each subtotal thus calculated by the hourly wage appropriate to each, and summing all such costs to determine the total care provider cost associated with each patient's visit.

TABLE 5

LEVELS OF PHYSICIAN CARE/CONSULTATION COSTS EMPLOYED IN THE STUDY

LEVEL OF COST	RANK OF CARE-PROVIDER	LEVEL OF PSP	LEVEL OF VIP	GS EQUIVALENT GRADE - STEP
\$10.70/HR	CAPTAIN	\$100/MO	---	--- A
\$12.12/HR	CAPTAIN	\$350/MO	---	GS 11-4
\$14.29/HR	MAJOR	\$350/MO	---	GS 12-3
\$16.38/HR	CAPTAIN	\$350/MO	\$9,000/YR	GS 12-9 ^B
\$18.55/HR	MAJOR	\$350/MO	\$9,000/YR	GS 13-7 ^C
\$19.97/HR	MAJOR	\$350/MO	\$12,000/YR	GS 14-5

A. THE LOWEST CIVILIAN PHYSICIAN GRADE IS THAT OF GS 11-1.
THE CORRESPONDING HOURLY WAGE EQUIVALENT IS \$11.24/HR.

B. ALSO APPROXIMATES GS 13-2.

C. ALSO APPROXIMATES GS 14-2.

4.2.1.6 Levels of Physician Care/Consultation, General Discussion.

4.2.1.6.1 Clearly, the cost configurations which have been included represent but a small part of the number of possible configurations which could have been addressed, i.e., in addition to varying the cost of the physician-rendered care, the cost of each of the categories of physician extenders could have been similarly manipulated. However, the number of such configurations quickly becomes large and unmanageable, e.g., 6 levels of physicians x 3 levels of nurse clinicians x 3 levels of AMOSIST = 54 configurations. However, since the number of AMOSIST in an AMIC outnumber physicians by a factor of approximately 6:1 the relative impact upon the cost effectiveness of an AMIC's operation is much less affected by the change in grade/pay of a single AMOSIST vis-a-vis a change in grade/pay of the AMIC's physician. Also, the physician impacts upon the majority of the patients seen in the clinic and his salary is substantially higher than that of an AMOSIST, two additional reasons for emphasizing the cost associated with the physician rather than that of an AMOSIST.

4.2.1.6.2 Prior to addressing the actual findings of the present study, it is necessary to provide a further comment regarding the hourly wage equivalents which have been computed for physicians and employed in the present study in order that they may be placed in proper perspective vis-a-vis the issue of "cost to the Army" and the realities of the Army's pay/promotion/education/obligation structure. While the range of values employed in the study reflect valid computations, it will be seen that other factors interact in such a way as to render only the uppermost values as plausible and realistic possibilities.

4.2.1.6.3 As regards the two lowermost values, it is observed that most physicians presently entering the service are either volunteers (who, have no payback time, are immediately eligible for both PSP and VIP payments) or are graduates of the military's Health Professions Program (HSPS). Albeit the level of pay actually received for those entering the Army via the HSPS is, during their initial payback years, at the two lowest levels cited (Table 5), there exists, in actuality, a substantial second cost (i.e., in addition to their salaries) which is associated with such personnel--the cost of (a) recruiting them and (b) subsequently putting them through as much as four years of medical school. While the school-related costs are generally the larger amounts, it is

noted that the cost associated with recruitment efforts, per se, are not negligible (estimated to be nearly \$4000 per physician for volunteers). The larger cost (i.e., that provided per year for school support under HPSP), however, can range from \$6,500 to \$10,000 more per year depending primarily upon tuition costs. According to Army Regulation (AR) 601-141 (that which governs the administration of the HPSP), each HPSP participant receives reimbursement for all books, fees, and tuition costs in addition to a \$400 per month stipend. Hence, with no consideration for recruiting costs, for the physicians who have received such support throughout four years for medical school, such costs may total between \$26,000 and \$40,000 or more by the time he arrives on active duty.* Therefore, if one ignores the issue of monetary interest on such a sum, and assumes a straight line amortization schedule of the "payback" years, it is clear that fully supported HPSP personnel are costing the Army an additional \$6,500 to \$10,000 per year. For such physicians hourly wage equivalent should not be the \$10.70 and \$12.12 as utilized herein; rather values in the \$14.00-\$15.00 range (i.e., similar to, or somewhat higher than that used at the third level of costs used in the present study) should be utilized.

4.2.1.6.4 For the physician who completes his medical schooling without financial assistance from the Army and enters the service in the grade of Captain, the cost is not mitigated. In fact, from the view point of the cost-effectiveness, the situation is considerably worsened since such a non-obligated officer is eligible for full VIP. Hence the hourly wage equivalent is not \$10.17 per hour; rather it is \$16.70 per hour--a wage which exceeds that employed herein as the fourth highest level of physician care/consultation costs.

*ALL HPSP physicians do not necessarily receive four full years of support. They may enter the program at any time during their medical schooling.

4.2.1.6.5 The pay composite configuration associated with the two middle-level costs employed in the study are rather infeasible alternatives when viewed within the context of the usual military pay/promotion/education/obligation structure. The \$14.20 per hour level was derived from the combination of a Major with more than two years of service who is not earning VIP. This combination is normally encountered among physicians undergoing their residency training (and is very frequently encountered elsewhere). As such, it is clearly impossible for them to be concurrently assigned to work full time in an AMIC or GOC. The next higher level of pay (\$16.38 per hour) was derived from an equally rare combination, i.e., that of a Captain who has completed more than two years of active service, and who has also completed his residency training (but has not completed his residency-related service obligation). It is highly improbable that individuals who have completed their residencies would still have the rank of Captain (i.e., they would normally have been promoted by this time). Nonetheless, as noted earlier, such an individual would be an unlikely candidate to be assigned to an AMIC or GOC due to the level of his training.

4.2.1.6.6 The assignment to an AMIC or GOC of physicians working at the two lowermost levels of pay will, in all likelihood, depend upon their level of education. Those earning the highest level of pay (\$19.97 per hour) correspond to Majors who have completed all service obligations. These include both non-obligated General Medical Officers (GMOs) and those who have completed their "pay back" time following the completion of a residency in a medical specialty. The next lower level of pay (\$18.55 per hour) is largely limited to Majors who have completed their residencies, but have not yet completed the service obligation which has been incurred as a result of that training. While it is unlikely that the Army would assign residency-trained physicians to work in AMICs or GOCs, it is entirely feasible that unobligated GMOs in the rank of Major (at \$19.97 per hour) would be utilized. In fact, two-thirds of the regularly assigned AMIC physicians were serving in this grade.

4.2.1.6.7 The implication of the discussion presented in the past several paragraphs is that, for at least military physicians, it is the middle and, more likely the upper levels of costs which are most appropriate to be considered in evaluating the present analysis. If one makes the logical assumption that physicians who have completed their residencies will not be assigned to either an AMIC or GOC, the remaining candidates are principally Captains with existing education-related service obligations (and accrued financial assistance costs to be amortized during this time) or unobligated Captains and Majors eligible to earn full VIP.

The hourly wage equivalent for these likely-to-be-assigned personnel range, therefore, from a low of between \$14.00-\$15.00 per hour to a high of nearly \$20.00 per hour.*

4.2.2 Non-Adjusted Findings

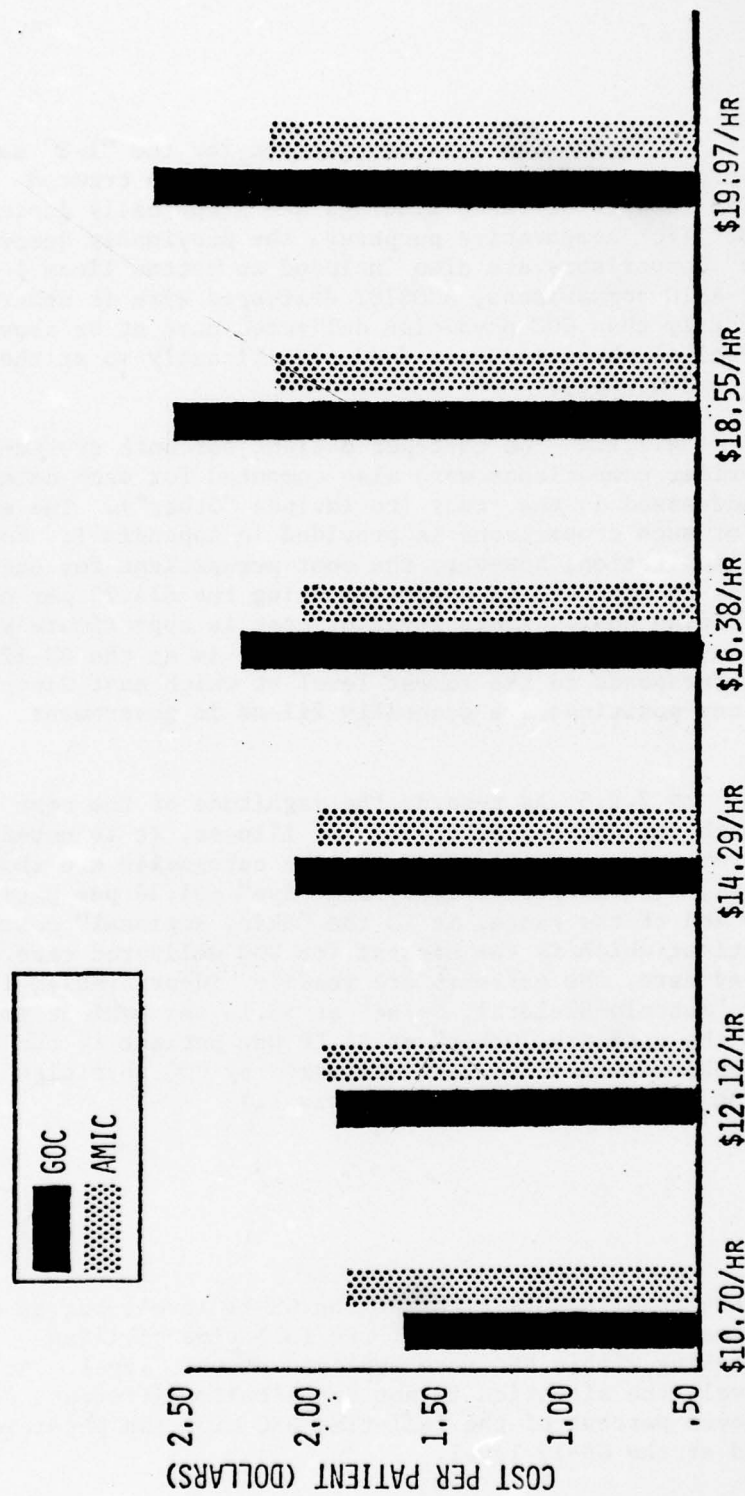
4.2.2.1 The average cost per patient for patients treated for specifically categorizable illness (i.e., excluding "Other") is shown for the six levels of physician cost previously cited in Figure 12. Therein, as is expected, the cost-per-patient rises from all groups as the levels of physician-rendered care costs rises. Too, as would be expected, the extent of increase is differentially more rapid for GOC/GOC physician delivered care. At the lowest level of physician cost (\$10.70 per hour), that associated with a Captain drawing no VIP, the average cost per patient (\$1.67) is lower for GOC delivered care than it is for AMOSIST delivered care (\$1.81), but the difference is only of marginal statistical significance ($p = .0993$). The costs are nearly equal at the next higher level (\$12.12 per hour). AMIC delivered care is less costly than GOC delivered care at the third level of cost (\$14.29 per hour), but the difference is clearly non-significant ($p = .2513$). At the third highest level of costs, however, all differences are statistically significant and all show AMIC/AMOSIST delivered care to be less expensive.

4.2.2.2 The same analyses were also performed for the entire patient sample (i.e., including category "Other" patients). The principal effect of adding these patients to the sample is to shift the AMIC cost average to a lower level of physician cost. The difference between AMIC delivered care and GOC delivered care is now statistically significant at the third level (\$14.29) of physician care/consultation cost (versus the fourth level for the "1-8" patient sample). (See Appendix I for costs at all levels.)

*Discussion during a recent (April 1978) HSC Commander's Conference indicated that both legislation presently before Congress and that being developed by Congress will further increase these levels of costs in the next few years.

FIGURE 12

CARE-PROVIDER COST PER PATIENT FOR ILLNESS-CATEGORIZABLE PATIENTS
ACCORDING TO LEVEL OF COST FOR PHYSICIAN-RENDERED CARE/CONSULTATION^a



LEVEL OF COST OF PHYSICIAN-RENDERED CARE/CONSULTATION^b

- ^a. PATIENTS IN CATEGORIES OF ILLNESS 1-8 ONLY.
^b. THE LEVELS OF STATISTICAL SIGNIFICANCE ASSOCIATED WITH EACH LEVEL OF COST ARE AS FOLLOWS
 (FROM LEFT TO RIGHT): .0993, .0613, .2513, .0158, .0009, .0000.
 THE DEGREES OF FREEDOM ARE 1/1354 FOR ALL COMPARISONS.

4.2.2.3 The cost per patient for the "1-8" sample has also been computed for AMOSIST and GOC physician treated patients. The results of these findings are graphically depicted in Figure 13. (For comparative purposes, the previously described "system-wide" comparisons are also included as dotted lines.) As with the GOC-AMIC comparisons, AMOSIST delivered care is observed to be less costly than GOC physician delivered care at or above the third level of physician care (and significantly so at the fourth level and higher).

4.2.2.4 The cost-per-patient for both system-wide and care provider comparisons were also computed for each category of illness addressed in the study (to include "Other"). The entire matrix of such comparisons is provided in Appendix I. For the purpose of illustration, however, the cost-per-patient for each of the categories is provided in Figure 14 using the \$14.29 per hour level of physician cost. (This level of cost is approximately midway between the extremes employed in the study and is at the GS-12 level, that which corresponds to the lowest level at which most General Medical Officer positions are generally filled in government service.*)

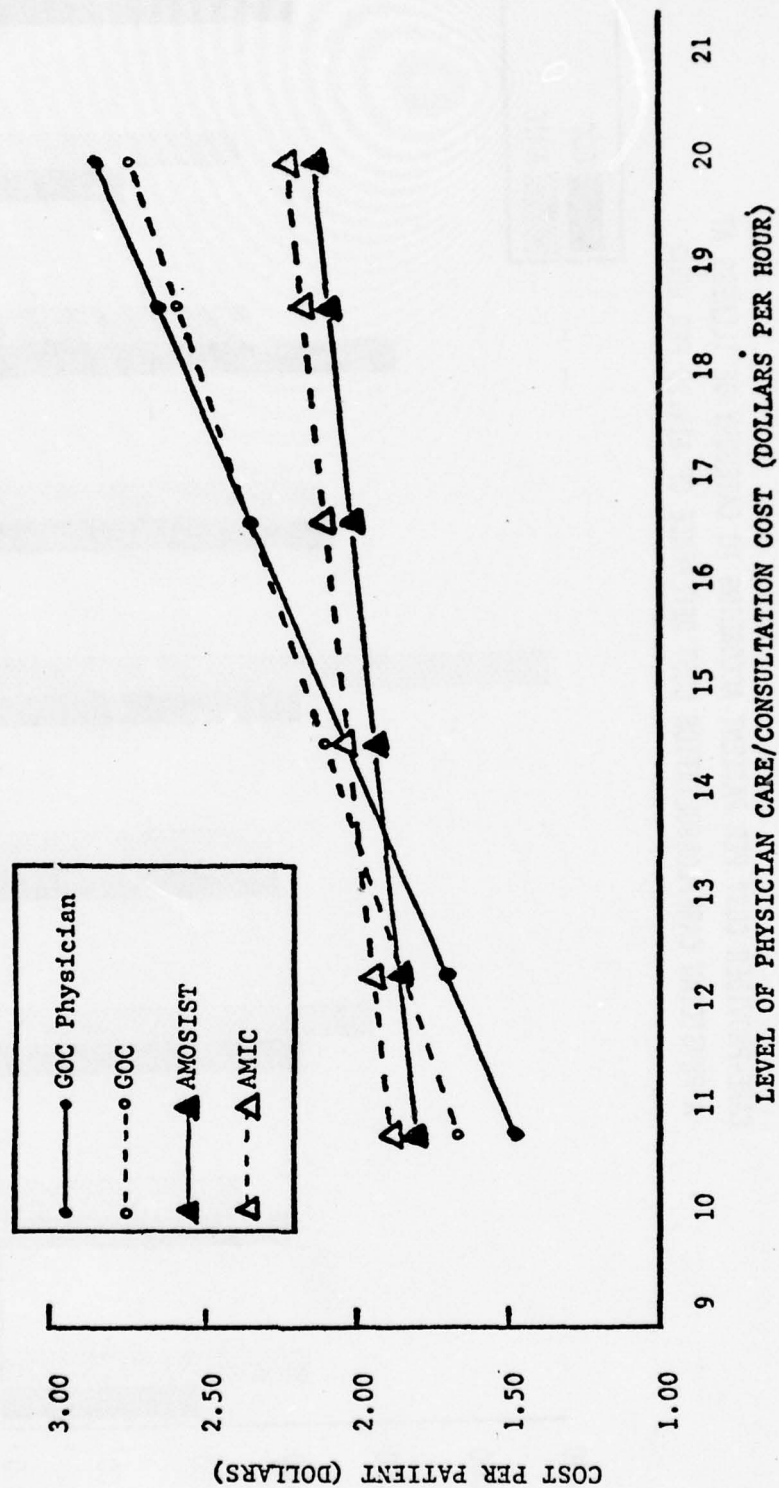
4.2.2.5 As regards the magnitude of the cost associated with the various categories of illness, it is noted that for GOC delivered care, the least expensive categories are those of "Skin, General," (\$1.08 per patient) and "Eye" (\$1.30 per patient). At the other end of the range, it is the "Skin, Regional" cost at \$2.22 per patient which is the highest for GOC delivered care. For AMIC delivered care, the extremes are readily identifiable, i.e., the category "Musculo-Skeletal, Spine" at \$3.14 per patient is the highest, and the category "Other" at \$1.38 per patient is the lowest. (The corresponding values for care delivered by GOC physician and by AMOSIST can be determined from Appendix I.)

*It is possible to hire physicians at the GS-11 level, but as of 5 May 1978, less than one percent of the full-time civilian physicians working within HSC were employed at this level. At the GS-12 level, the situation is not drastically different, for only about seven percent of the full-time HSC civilian physicians were employed at the GS-12 level.

Figure 13

CARE PROVIDER COSTS AS A FUNCTION OF PHYSICIAN CARE/CONSULTATION

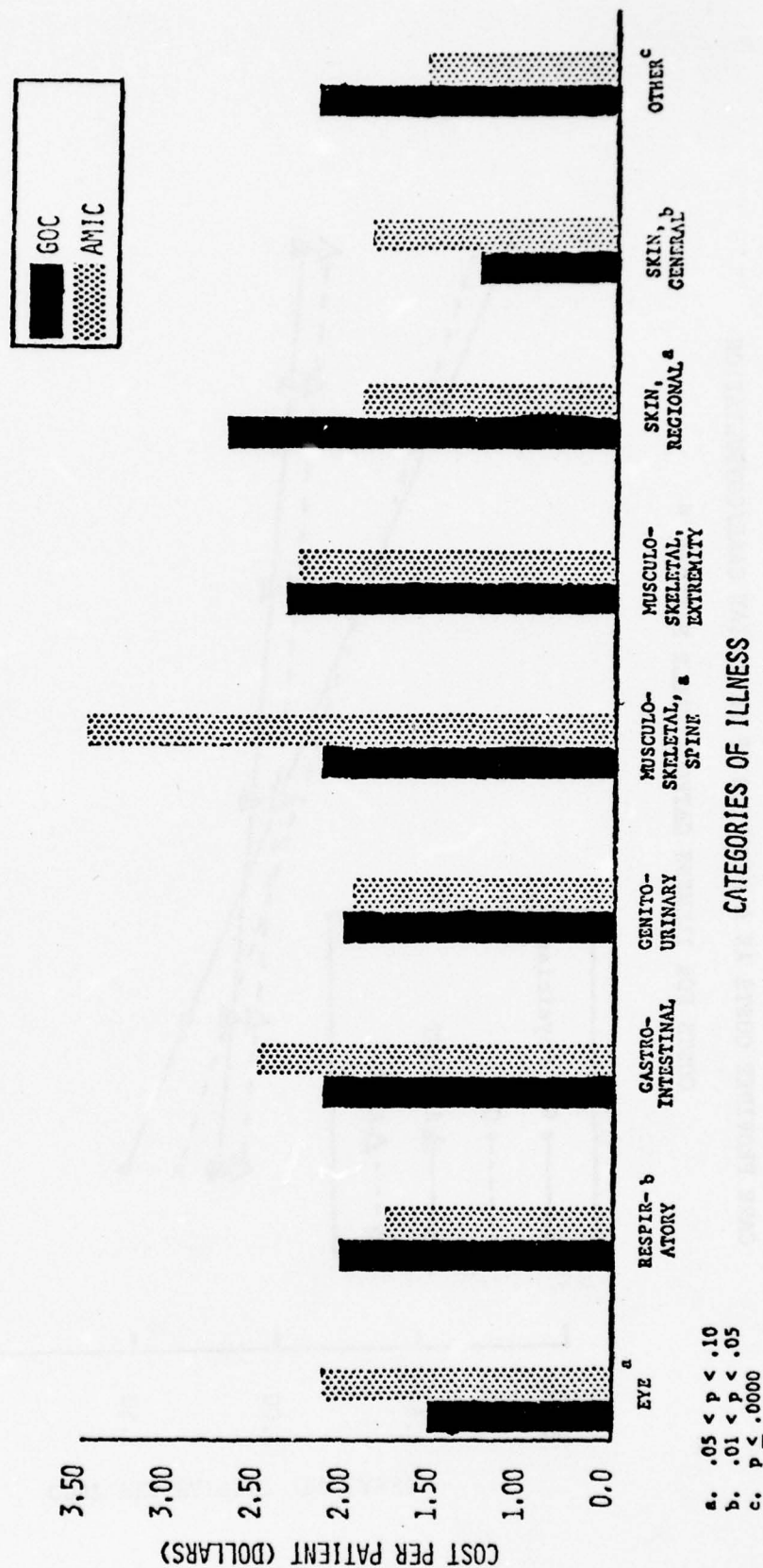
COSTS FOR ILLNESS CATEGORIZABLE PATIENTS^a



a. Categories of illness "1-8" only (excludes "other").

FIGURE 14

CARE-PROVIDER COST PER PATIENT ACCORDING TO CATEGORY OF ILLNESS AT
A PHYSICIAN CARE/CONSULTATION COST REFERENCE OF \$14.29 PER HOUR



4.2.2.6 The cost analyses according to the category of illness are presented in another format in Figure 15 for all levels of physician care/consultation cost considered in the study. Exclusive of the summary comparisons presented in the lowermost two lines of the figure, it is apparent that GOC delivered care cost less than AMIC/AMOSIST delivered care at the lower level of physician care/consultation costs for most categories of illness. The reverse is true at the upper levels. The most blatant exception to this trend is for the category "Other," which shows significant differences in favor of AMIC delivered care at all levels of costs.

4.2.2.7 The last column of Figure 15 gives the number of patients involved in each comparison. As before, the reader is cautioned that the replicability of the means cited for these data is related to the sample size evidenced; and that the values cited for several of the GOC subsamples, in particular, are small--as is the AMIC subsample for the "Musculo-Skeletal, Spine" category.

4.3.2 Disposition-Adjusted Findings

4.2.3.1 The effects of adjusting the average cost-per-patient to include a recognition of the additional physician-related costs for patients who are referred to specialty clinics for further evaluation/treatment are depicted in Figures 16 and 17. The amount of the adjustment (i.e., the amount to be added to the cost-per-patient for each referred patient) is \$2.53. This corresponds to the cost-per-patient for care by a Major earning full VIP and PSP for a period of 8.44 minutes (the amount of time used in making the previously described disposition adjustments to the physician care requirements data, re paragraph 4.1.2.3).





4.2.3.2 Figure 16 addresses the cost data from those patients whose illnesses were classified among the eight specifically included in the study. The figure shows the mean cost per patient and trends evidenced in the previously presented non-adjusted analyses (Figure 12) are evidenced here, too.

4.2.3.3 The principal effects of the disposition adjustments is to increase the cost-per-patient at all levels of cost. The amount of the increase was \$1.06 per patient for GOC treated patients and \$0.93 per patient for AMIC treated patients. (The amount of the increase for patients treated by GOC physicians and AMOSIST, per se, was \$1.11 and \$0.80 respectively.) Since the amount of the increase was larger for GOC-treated patients, the differences between GOC and AMIC treated patients, too, was increased at and above the third level of physician care/consultation. As a result, the difference in costs between GOC and AMIC treated patients is now nearly a statistically significant one ($p = .615$) at the third

Figure 15

COST EFFECTIVENESS COMPARISONS ACCORDING TO CATEGORY OF ILLNESS FOR ALL LEVELS OF PHYSICIAN CARE/CONSULTATION COSTS

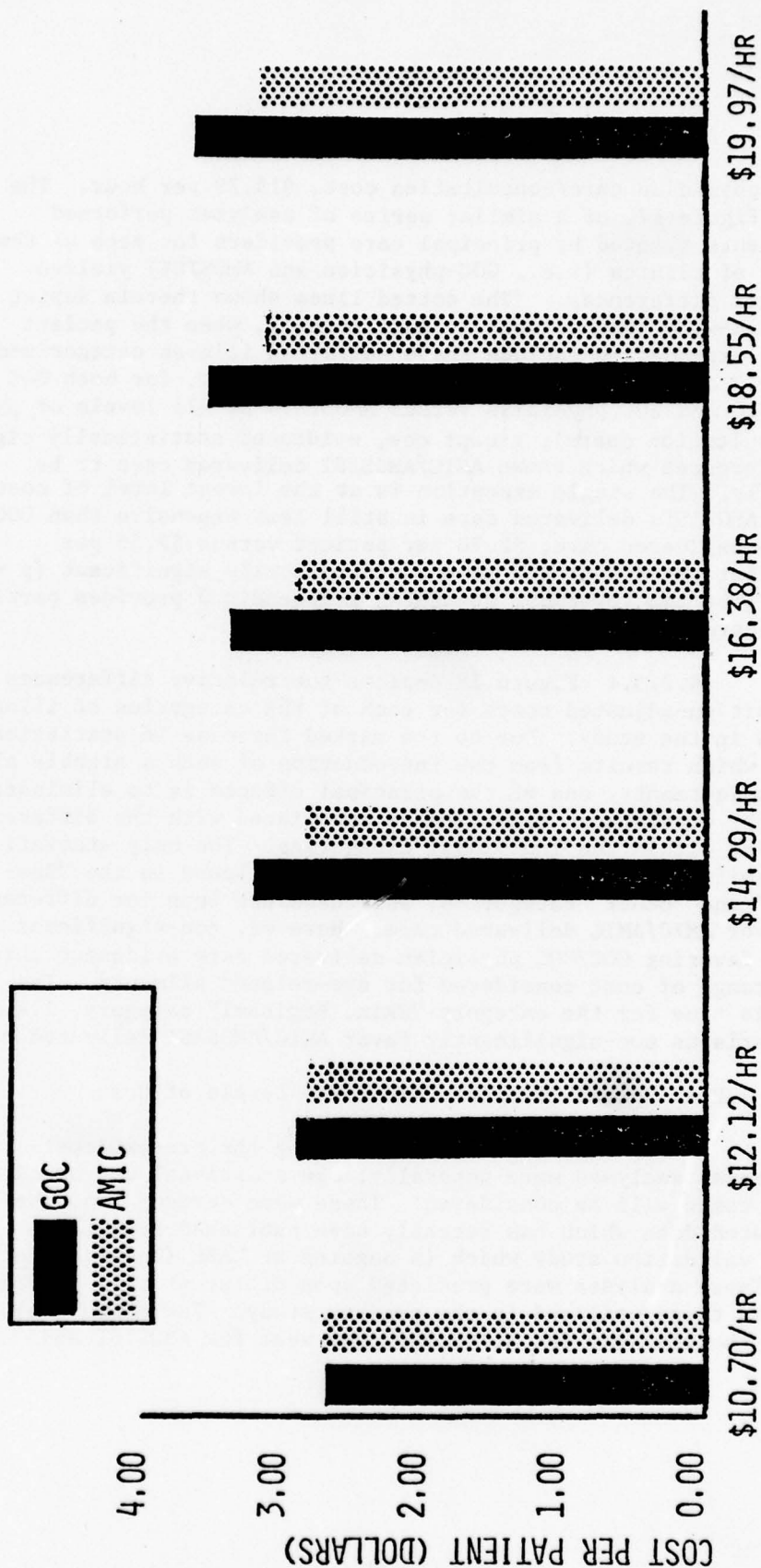
CATEGORY OF ILLNESS	CLINIC/CARE PROVIDER	LEVELS OF PHYSICIAN CARE/CONSULTATION COSTS						NO. PT: GOC/AMI
		CAPTAIN W/O VIP (\$10.70/hr)	MAJOR W/O VIP (\$12.12/hr)	CAPTAIN PARTIAL VIP (\$14.29/hr)	CAPTAIN FULL VIP (\$16.38/hr)	MAJOR PARTIAL VIP (\$18.55/hr)	MAJOR FULL VIP (\$19.97/hr)	
EYE (1)	GOC vs AMIC							32/44
RESPIRATORY (2)	GOC vs AMIC							113/412
GASTROINTESTINAL (3)	GOC vs AMIC							69/90
GENITOURINARY (4)	GOC vs AMIC							31/124
M S, SPINE (5)	GOC vs AMIC							48/14
M S, EXTREMITY (6)	GOC vs AMIC							83/59
SKIN, REGIONAL (7)	GOC vs AMIC							45/71
SKIN, GENERAL (8)	GOC vs AMIC							37/82
OTHER (9)	GOC vs AMIC							601/183
1 - 8	GOC vs AMIC							459/897
ALL	GOC vs AMIC							1060/108

 AMIC/AMOSIST Significantly Lower Cost ($P < .05$)  GOC/COG-Physician Significantly Lower Cost ($P < .05$)
 AMIC/AMOSIST Non-Significantly Lower Cost ($.05 < p < .95$)  GOC/COG-Physician Non-Significantly Lower Cost ($.05 < p < .95$)

 Costs Are Equal, Differences Non-Significant ($p \geq .95$)

FIGURE 16

DISPOSITION-ADJUSTED CARE-PROVIDER COSTS PER PATIENT FOR ILLNESS-CATEGORIZABLE PATIENTS
ACCORDING TO LEVEL OF COST FOR PHYSICIAN-RENDERED CARE/CONSULTATION^a



LEVEL OF PHYSICIAN'S CARE/CONSULTATION COST^b

a. PATIENTS IN CATEGORIES OF ILLNESS 1-8 ONLY.

b. THE STATISTICAL SIGNIFICANCE ASSOCIATED WITH EACH LEVEL OF COST ARE AS FOLLOWS
(FROM LEFT TO RIGHT): .9208, .4664, .0615, .0046, .0002, .0000.
THE DEGREES OF FREEDOM ARE 1/1343 FOR ALL COMPARISONS.

level of physician care/consultation cost, \$14.29 per hour. The results, Figure 17, of a similar series of analyses performed upon patients treated by principal care providers for each of the two types of clinics (i.e., GOC-physician and AMOSIST) yielded even larger differences. (The dotted lines shown therein depict the "system-wide" comparisons.) Additionally, when the patient sample is expanded to include those suffering illness categorized as "Other," all possible summary comparisons (i.e., for both GOC versus AMIC and GOC physician versus AMOSISTs at all levels of physician care/consultation costs), except one, evidenced statistically significant differences which shown AMIC/AMOSIST delivered care to be less costly. The single exception is at the lowest level of cost. Therein, AMOSISTs delivered care is still less expensive than GOC physician delivered care, \$2.70 per patient versus \$2.56 per patient; but the difference is not statistically significant ($p = .1285$). (The two lowermost segments of Appendix J provides particulars regarding these analyses.)

4.2.3.4 Figure 18 depicts the relative differences in disposition-adjusted costs for each of the categories of illness addressed in the study. Due to the marked increase in statistical variance which results from the introduction of such a sizable all-or-none adjustments, one of the principal effects is to eliminate much of the statistical significance associated with the differences which exist within the individual categories. The only statistically significant difference which remain are found in the "Respiratory" and "Other" categories, and these are both for differences which favor AMIC/AMIC delivered care. However, non-significant differences favoring GOC/GOC physician delivered care evidenced throughout the range of cost considered for eye-related ailments. The reverse is true for the category "Skin, Regional" category, i.e., all comparisons non-significantly favor AMIC/AMOSIST delivered care.

4.2.4 Reanalysis With BAMC-Cited Levels of Cost

4.2.4.1 Prior to addressing the present cost-effectiveness analyses more generally, one additional set of care provider costs will be considered. These were derived from the cost-related data which has recently been published from the clinical validation study which is ongoing at BAMC (Tompkins, *et al*, 1977). These analyses were predicted upon different care provider costs than those utilized in the present study. The annual salaries employed therein were set at \$9,500 per year for AMOSIST and

Figure 17

DISPOSITION ADJUSTED CARE PROVIDER COSTS PER PATIENT FOR CATEGORY 1-8 PATIENTS
AS A FUNCTION OF LEVEL OF PHYSICIAN CARE/CONSULTATION COST

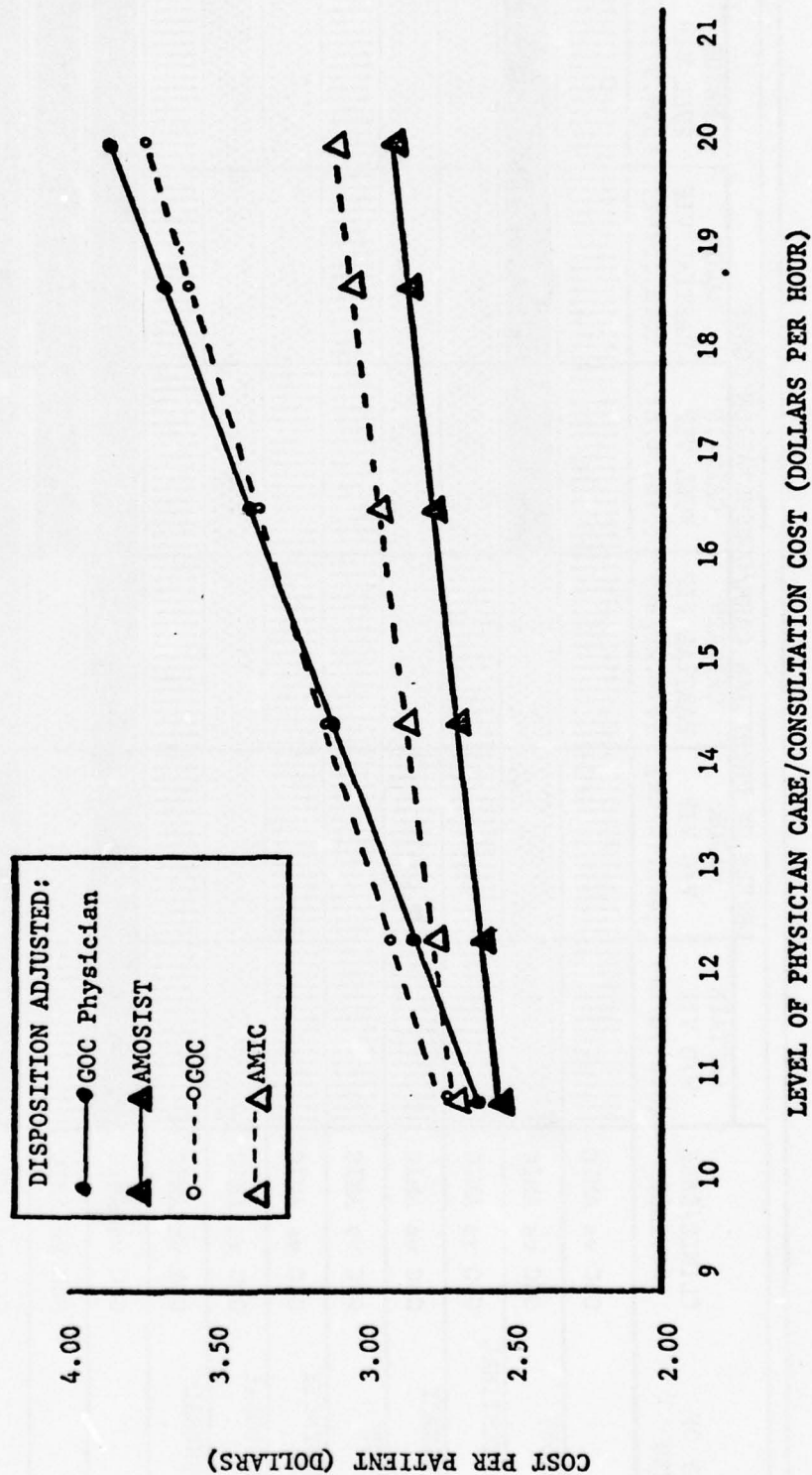


Figure 18

DISPOSITION-ADJUSTED COST EFFECTIVENESS COMPARISONS ACCORDING TO CATEGORY
OF ILLNESS FOR ALL LEVELS OF PHYSICIAN CARE/CONSULTATION COSTS

CATEGORY OF ILLNESS	CLINIC/CARE PROVIDER	LEVELS OF PHYSICIAN CARE/CONSULTATION COSTS						NO. PTS GOC/AMIC
		CAPTAIN W/O VIP (\$10.70/hr)	MAJOR V/O VIP (\$12.12/hr)	CAPTAIN PARTIAL VIP (\$14.29/hr)	CAPTAIN FULL VIP (\$16.38/hr)	MAJOR PARTIAL VIP (\$18.55/hr)	MAJOR FULL VIP (\$19.97/hr)	
EYE (1)	GOC vs AMIC							32/44
RESPIRATORY (2)	GOC vs AMIC							113/412
GASTROINTESTINAL (3)	GOC vs AMIC							69/90
GENITOURINARY (4)	GOC vs AMIC							31/124
M S, SPINE (5)	GOC vs AMIC							48/14
M S, EXTREMITY (6)	GOC vs AMIC							83/59
SKIN, REGIONAL (7)	GOC vs AMIC							45/71
SKIN, GENERAL (8)	GOC vs AMIC							37/82
OTHER (9)	GOC vs AMIC							601/183
1 - 8	GOC vs AMIC							459/897
ALL	GOC vs AMIC							1060/1080

AMIC/AMOSIST Significantly Lower Cost ($p < .05$)
 AMIC/AMOSIST Non-Significantly Lower Cost ($.05 < p < .9$)
 GOC/GOC-Physician Non-Significantly Lower Cost ($.05 < p < .95$)

\$36,000 per year for physicians. (These figures correspond roughly to AMOSISTS in the grade E4.7,* i.e., somewhat less than the average rank, E5 of those encountered in the MEDDACs in the present study, and physicians in the grade of 04 (Major) who were drawing full variable incentive pay of \$12,000 per year.) Additionally, the investigators: (a) define their work-year as being comprised of 250 eight-hour man-days, and (b) on the basis of prior calculations by Nelson, et al, 1975, increased the individuals' annual salaries by a factor of 58% to account for overhead expenses.** Accordingly, these salary levels, man-year definitions, and overhead adjustments were used to recalculate the care provider cost associated with the care addressed in the present study. In doing so, the hourly rates which resulted were the following: Physician = \$28.44; Physician Assistant (PAs) = \$12.43; Nurse Practitioner = \$16.01; AMOSIST = \$7.51. As before, the Nurse Practitioner was assumed to be an 03 (Captain) and the PA, a CW2 (Chief Warrant Officer).

*A hypothetical grade, equivalent in salary to a value (via linear interpolation between the values of grade E-4 and E-5) .7 of the way from E-4 to E-5; hence, E4.7. The values employed for grades E-4 and E-5 were those cited in the previously referenced DA message (re p. 42).

**As cited previously, the cost analyses performed in the present study purposely excluded overhead factors. It is, nonetheless, questioned whether or not the 58 percent used in the Tompkins, et al, study is applicable to data generated from a US Army AMIC since the figures were computed from a sample of but 12 MEDEX graduates (physician assistant level personnel trained in the use of algorithms) employed as full-time, salaried primary care providers in private, fee-for-service practices (Nelson, et al, 1973). Additionally, among these 12 individuals and their associated practices, the percent overhead varied substantially (from 33% to 120% of their salaries using the method of calculation employed to arrive at the 58% figure previously cited).

4.2.4.2 The results of the re-analyses are shown in Figure 19. It is clear that a comparative analysis, using the BAMC-cited levels of care provider costs, yielded a marked cost-advantage for AMIC/AMOSIST provided care regardless of the comparisons selected. All comparisons evidenced differences which are significant at or beyond the .0000 level of confidence. Depending upon the specific comparison/patient sample selected in the magnitude of the difference in cost per-patient ranges from a low of \$0.81 to a high of \$1.61 more per patient for GOC/GOC physician delivered care. A more detailed presentation of these findings are included in Appendices K and L for non-adjusted and disposition adjusted data.

4.2.5 Additional Discussion

4.2.5.1 In summary, the cost analyses which have been performed, (using the fixed non-physician care provider costs as cited) have been reasonably consistent in portraying the AMIC/AMOSIST delivered care to be cost effective vis-a-vis GOC/GOC physician delivered care, particularly at the upper levels of physician care/consultation costs which have been examined. When considering both nonadjusted (Figure 13) and disposition-adjusted data (Figure 17), it is observed that the "break-even" point (in terms of level of cost for physician care/consultation activities) is somewhat more than thirteen dollars per hour. Levels of physician care/consultation costs higher than this favor AMIC/AMOSIST delivered care.

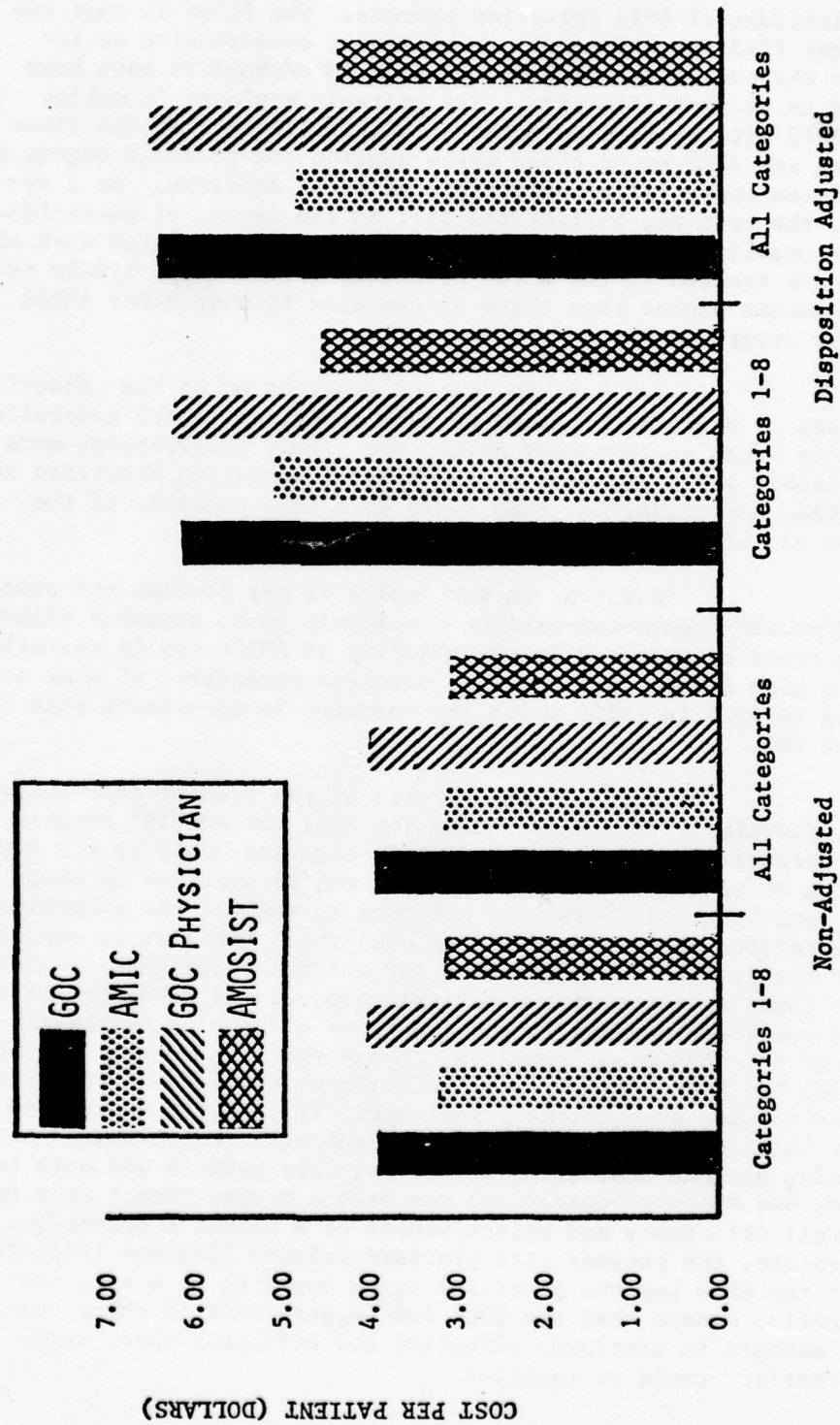
4.2.5.2 The last cited BAMC findings of Tompkins, et al (1977), with its use of different methods, of computing care provider costs for all types of care providers included in the present study, add some small measure of generality to the basic findings as they apply to the clinics addressed herein.

4.2.5.3 It is reiterated that the present findings can not be generalized to the AMOSIST program at large. The AMIC cited were purposely not selected at random. Rather, they were chosen because, at the time of the Phase I, on-site evaluations, they were judged to be among those which (a) were being most effectively run, and (b) were operating in greatest accord with the operational guidelines then available (i.e., Health Services Command's Ambulatory Patient Care Model #13 with its associated Implementation Packet).

Figure 19

DISPOSITION ADJUSTED AND NON-ADJUSTED SUMMARY COST COMPARISONS ACCORDING TO

CATEGORY OF ILLNESS USING BAMC-CITED LEVELS OF CARE PROVIDER COSTS



CATEGORIES OF ILLNESS AND DISPOSITION ADJUSTMENTS

4.2.5.4 Two points were made regarding the implications of this selection process. The first is that the present findings are likely to be rather conservative as regards the extent to which the present AMIC/AMOSISTS have been found to be cost effective. The criteria employed in making the AMIC site selections makes it highly likely that the sites chosen are also among those which provide the greatest degree of physician supervision/monitorship of their AMOSISTS. As a result, the cost-per-patient (as well as the amount of physician care/consultation time required per patient) associated with the patients treated in the AMICs presently included are likely to be somewhat higher than those encountered in most other AMICs in the program.

4.2.5.5 The second implication of the selection process is that the findings of this study, while not generalizable to other contemporary AMICs, are likely to represent more reasonable approximations to the type of operation described in existing HSC guidelines than would have been possible if the sites had been randomly selected.

4.2.5.6 In sum, while it may be that the present AMIC/AMOSIST costs-per-patient are likely to be somewhat higher than those encountered in the majority of AMICs now in operation, it is also likely that they are more representative of what costs would be like in AMICs which are operated in accordance with HSC Model #13.

4.2.5.7 The results of the present cost analyses are, therefore, viewed as indicating that the AMOSIST Program has the potential to provide less costly care (at least to the population it is designed to serve) than can be provided in GOCs. The word "potential" is used not only to reflect the generalization related considerations just described, but also to emphasize that the present study has been intentionally designed to minimize focus upon the direct patient care related behaviors of the care providers working in the two types of clinics addressed. It was not possible, therefore, to determine whether or not personnel had been fully or most efficiently utilized at each site. Nevertheless, as previously indicated, it is fully recognized that local management practices and policies (e.g., those concerning patient scheduling practices, duty rosters and work schedules, and hours of operation) can have a marked impact upon the overall efficiency and effectiveness of a clinic's operation. Therefore, the present care provider related findings indicate that the AMIC has the potential to be operated in a more cost effective manner than the GOC; and suggest that if these clinics are managed in similarly effective and efficient ways, such "potential" could be realized.

5. CONCLUSION

As regards the clinics included in the present study, it is concluded that:

5.1 AMIC and AMOSIST delivered care requires less physician time than does GOC and GOC physician delivered care.

5.2 AMIC and AMOSIST delivered care is less costly than GOC and GOC physician delivered care at the levels of physician care/consultation costs which are likely to exist within most clinics.

6. RECOMMENDATIONS

No recommendations are made as a result of the present findings. Concern has been previously expressed (Schopper, 1978) regarding other facets of the AMOSIST Program not herein addressed, and the data have not yet been analyzed regarding the more important issues of "safety and effectiveness of care." Final recommendations will appear in an executive summary to follow.

7. REFERENCES

Nelson, E.C., Cordner, K., Johnson, K.G., Financial Impact on Physician's Assistants on Medical Practice. New England Journal of Medicine, 1975, 239, 527-530.

Schopper. A.W., Health Care Delivery Study Proposal: AMOSIST Program Field Evaluation (Project APFE). (As Incl 1 to Ltr, US Army Academy of Health Sciences, HSA-CHC, subject: Proposed Final Study Protocol for the AMOSIST Program Field Evaluation, 20 April, 1976.)

Schopper. A.W. AMOSIST Program Field Evaluation Phase I: Operational Characteristics and Program Acceptance, Health Care Studies Division Report: HCSD 78-002-A, 1978.

Tompkins, R.K., Wood, R.W., Wolcott, B.W., Walsh, B.T., The Effectiveness and Cost of Acute Respiratory Illness Medical Care Provided by Physicians and Algorithm-Assisted Physicians' Assistants. Medical Care, 1977, 15, 991-1003.

Ambulatory Patient Care Model #13, US Army Health Services Command, HSPA-A, August 1976.

Army Regulation 601-141, US Army Health Professions Scholarship Program, 1 June 1977.

APPENDIX A

INITIAL LETTER OF NOTIFICATION TO SITE
(Sample)



HSPA-A

SUBJECT: Phase II Instructions for Project APFE (AMOSIST Program
Field Evaluation)

Commander
USAMEDDAC
(Site designation)

1. Your medical activity (MEDDAC) has been designated to be one of the six sites to be included in Phase II of the current study of the AMOSIST Program, the AMOSIST Program Field Evaluation (Project APFE). This phase of the study will collect data from both AMOSIST-staffed Acute Minor Illness Clinics (AMICs) and physician-staffed General Outpatient Clinics (GOCs). It is to be conducted during the third quarter of FY 77. During this period, on-site visits of two weeks duration will be made by two members of a Project APFE study team at each of the selected study sites. Additional information concerning the visits to your facility during 5-18 June 1977 will be provided in the near future. At the present time, however, it is requested that the actions described below be implemented at your facility in preparation for their visit.
2. As part of the approved requirements for Project APFE it is asked that during the period 25 Apr-13 May 1977 the medical record of each individual treated in the General Outpatient Clinic (GOC) of your facility be marked by the clinic's receptionist on the upper left hand corner of the rear of the medical record jacket in accordance with the example and instructions provided at Inclosure 1. Note that the word "treated" is emphasized above. It is intended that the records be marked for only those patients who are examined and treated for a medical problem at the time they present themselves at the clinic, i.e., the records of patients who appear at the clinic for the purpose of obtaining refill prescriptions are not to be marked.
3. It is further requested that (a) each entry to whatever patient log is kept in the clinic be annotated with a T (for treatment) or R (refill) to reflect which of the two broad categories of care was provided, and (b) at the close of business each day of the indicated period a total be computed for each of these two categories of patients seen that day and



HSPA-A

SUBJECT: Phase II Instructions for Project APFE (AMOSIST Program Field Evaluation)

that those totals be entered into the log in a single line entry following the entry for the last patient treated that day. (If a suitable patient log is not maintained within the clinic, it is requested that one be initiated to indicate the date, name, SSN, and patient category, i.e., T or R, for this test period.) These data will be requested by the Project APFE team members when they arrive.

4. If there are questions regarding the above, they may be directed to the Project Officer, MAJ Schopper, Autovon 471-3331/4541.

FOR THE COMMANDER:

1 Incl.
as

APPENDIX B
FOLLOW-UP LETTER TO SITE
(Sample)

ESPA-A

11 APR 77

SUBJECT: Support Requirements for Phase II, Project APFE (AMOSIST Program Field Evaluation)

Commander
US Army MEDDAC
(Site designation)

1. Reference: Letter, ESPA-A, DA, HQ US Army Health Services Command, 21 March 1977, subject: Phase II Instructions For Project APFE (AMOSIST Program Field Evaluation).
2. The referenced letter indicates that your facility will be visited by two members of a study team during the period 15-28 May 1977 to collect data for use in Project APFE (AMOSIST Program Field Evaluation). The senior individual who is to visit your facility is the following:

(Name and Rank of visiting team chief)

The above named individual will be accompanied by an enlisted assistant in the grade of E4. Request that appropriate billeting arrangements be made.

3. In order for these personnel to accomplish their assigned objective and collect the data required in an efficient, timely manner, it is necessary that the following support be provided for the duration of their visit:

a. Two E-4s/GS-3s or above to assist in the distribution and collection of questionnaires and the performance of other data collection procedures as requested by the senior member of the study team. Although it is desirable that these personnel be the same individuals throughout the period of the visit, it is recognized that such may be impractical in some instances. Should this be the case at your facility, it is requested that no more than four separate individuals be utilized and that each be involved for at least five consecutive workdays. (Personnel in the "medical hold" status—or other suitable personnel in transient status—are acceptable as long as the grade requirement cited above is met.)

HSPA-A

11 APR 1977

SUBJECT: Support Requirements for Phase II, Project APFE (AMOSIST)
Program Field Evaluation

b. Access to the Acute Minor Illness Clinic (AMIC) on Sunday, the initial day of arrival of the Project APFE team, for the purpose of setting up the automated time clock apparatus which is to be used in the study.

c. Opportunity to brief personnel for one hour regarding the study. (It is necessary that this occur at the beginning of the two-week study period, prior to the initiation of the data collection effort on the first day of the study. Subsequent telephone coordination between MAJ Schopper and personnel of your facility will be required to establish the most appropriate time.)

d. Access to patient records for the purpose of obtaining data to be utilized in conducting a retrospective audit.

e. Access to a reproduction machine (e.g., xerox copier or equivalent) during both regular and after-duty hours.

f. Provisions for the overnight retention of records of patients treated during regular duty hours in the AMIC of your facility.

4. Requirements 3d, e, and f above relate to the approved study requirement for on-site study personnel to obtain xerox copies (from which the patient's name and social security number have been obliterated) of portions of patient records previously marked for the purpose of retrospective audit and of portions of records of patients treated in the AMIC while the team is on-site.

5. If there are questions regarding the above, they may be directed to the Project Officer, MAJ Schopper, AV 471-3331/4541.

FOR THE COMMANDER:

Signed

THEODORA H. NAGEL
LTC, AGC
Adjutant General

RELEASED BY
<i>Q. Q. W.</i>
A. A. HOWARD, MD, COL, MC
DCSFA

APPENDIX C
PROJECT OFFICER'S INSTRUCTION PACKET



TIME

CARD

RECORDING

SYSTEM

UTILIZATION

AMOSIST PROGRAM FIELD EVALUATION
(APFE)
TIME CARD

HEALTH PROGRAM SYSTEMS CENTER
INDIAN HEALTH SERVICE, HSMHA

PROJECT OFFICER'S
REFERENCE MANUAL

Prepared by
MAJ SCHOPPER



8-071693 SIMPLEX TIME RECORDER CO., GARDNER, MASS. PRINTED IN U.S.A.

Nº 19256

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VII	Logistical Instructions for Project Officers
	List of Inclosures

I SCHEDULE

SATURDAY: (1st day of travel)

1. Ship as air freight (or check in as "excess baggage") and insure for \$4,200, the Project APFE apparatus. (MAJ Schopper will transport the apparatus to the airport and meet you there one hour before departure time.)
2. Obtain billeting for self and assistant.
3. Secure APFE apparatus within the hospital (either within the clinic itself or in an area designated by the hospital duty officer, AOD).

SUNDAY:

Unpack, set-up, and check-out time clock system.

MONDAY:

1. Early briefing of clinic staff.
2. Initiate data collection procedures.
3. Coordinate procedures necessary to effect required copying of medical record entries.
4. Meet with hospital personnel (as protocol demands, preference for late afternoon or Tuesday meeting).

TUESDAY - THURSDAY: (9 days exclusive of Sat., and Sun.)

1. Duty Hours:
 - a. Synchronize time clocks at 15 minutes prior to opening of clinics.
 - b. Continue with time clock/patient satisfaction data collection.
2. After Duty Hours:
 - a. Secure time clocks (but keep plugged in).
 - b. Copy records of patients treated that day.
 - c. Obtain and copy appropriate records of personnel for retrospective audit.

FRIDAY:

1. Continue data collection up to beginning of clinic's lunch hour.
2. Repack (very carefully) Project APFE apparatus.

3. Obtain any administrative statement of nonavailability (as appropriate).
4. Conduct any "exit briefings" (as protocol demands).
5. Check upon status of your return flight reservations.

SATURDAY:

1. Check out of billeting.
2. Ship (or check in and insure) Project APFE apparatus at airport.
3. Return rental vehicle.
4. Return (selves) to San Antonio, Texas.
5. At San Antonio airport, account for APFE apparatus and arrange for return of same to CDHCS (i.e., call MAJ Schopper at 822-7223).

II DUTIES OF APFE TEAM MEMBERS

1. GENERAL. The on-site APFE team is to be made up of one officer or E-8 from the HCSD, one SP4 or SP5 attached to the HCSD, and two E-4s from the local facility. Exclusive of the record-copying duties described elsewhere (Section VI), the principal data collection tasks to be performed by the APFE team members are described below.

2. OIC/NCOIC.

a. General Supervisory Responsibility. The HCSD OIC or NCOIC will have overall supervisory responsibility for the on-site operation of the study.

b. Specific Responsibilities.

(1) Security of Time Clocks. The OIC/NCOIC will sign a hand-receipt for the time clocks and be responsible for their subsequent physical security during the course of the TDY.

(2) Initial Clinic Briefing. The OIC/NCOIC will conduct an initial on-site briefing to explain the operation of the study and the manner and extent of participation required by clinic personnel. (Handouts are at Incls 1-4)

(3) Entrance/Exit Briefing of Hospital Personnel. The OIC/NCOIC will brief the MEDDAC commander or his representative as requested. Preferably he is to attempt to arrange that the entrance briefing (if required) be done subsequent to the first day at the facility (or at least not during the morning of the first day of the study).

(4) Copying of Medical Record Entries. There is an immediate need, upon arriving on-site, to determine how and where the copying of the medical

record entries can be made for the patients treated in the clinic that day (and upon succeeding days of the study). Additionally, it will be necessary to determine how the copying requirements for the identified "retrospective" sample is to be met. This refers to the requirement to access the medical records room to obtain the records of individuals previously seen in the clinic and, thereafter, make copies of the entries made within specific time periods.

(5) Distribute Staff Satisfaction Questionnaires (SSQs). During the second or third day on-site, distribute SSQs to all medically trained personnel in the clinic and (for AMIC sites only) seek assistance in distributing SSQs to a comparable group of personnel serving outside the AMIC (See Incl 5). All are to be collected NLT Wednesday of the following week.

(6) Twice-A-Day Completion of AMIC or GOC Position Coding Sheet. At the beginning of each workday and at the resumption of duty after the noon meal, the senior member of the APFE team will enter the names of those individuals serving at each of the time clock stations indicated on the upper half of the AMIC (or GOC, as appropriate) Position Coding Sheet (Incl 6). The lower half of this form is to be used to record the nature of any changes in the recorded position code assignments that may occur (as might occur if a time clock fails or if there is a change in the number of care providers present) and/or to record any additional observations which impact upon the clinic's operation on the collection of data for the study (e.g., occurrence of emergency in the clinic, alteration of clinic hours, time out for training, etc.).

3. Enlisted Team Members.

a. RE Station.

(1) One enlisted member of the APFE team will be stationed at or near the clinic's receptionist. There, he will perform the following sub-tasks.

(a) Complete the SITE and DAY OF WEEK entries at the top of the time card and enter the initial time card punch upon the front of a patient time card at the time the patient arrives at the receptionist's desk.

(b) Record the unique 5-digit number of the patient's time card (it appears at the bottom of the card) on the bottom of the SF 600 or AMIC Data Collection Sheet (DCS) which is to be used to record the clinical findings and disposition of the patient for the clinic visit about to occur that day. (If the SF 600 or DCS to be used for that day's visit is not present in the records at the time the patient is "logged in" the APFE team member is to enter the code number in parentheses just below the last entry on the latest SF 600 or DCS appearing in the patient's medical record.)

(c) Enter the same 5-digit number in the upper right-hand corner of the Patient Satisfaction Questionnaire (PSQ) to be handed out at that station.

(d) Determine whether or not the patient is there for (1) evaluation/treatment or (2) merely to seek approval to renew a prescription. In the former (treatment) instance, he is to enter a "1" following the 5-digit code in the upper right-hand corner of the PSQ; if it is the latter (refill), then he is to enter a "2" in the same location.

(e) Enter a second time card punch upon the patient's time card.

(f) Hand the time card and Patient Satisfaction Questionnaire (on a clipboard) to the patient with instructions to complete the questionnaire and return it and the clipboard as soon as possible "to insure minimal delay of your treatment." Additionally, inform the patient that he will retain the time card throughout his visit to the clinic that day.

b. LX Station. A second enlisted member of the APFE team will operate the LX station, one of two time clock positions located near the exit of the clinic. The tasks associated with this station are the following.

(1) Record Laboratory and X-Ray Visits. Each patient who leaves the clinic to obtain laboratory test or x-rays will be directed by the care provider to the LX station on his way out of the clinic. The individual operating the LX station time clock will enter the time of exit from the clinic (by inserting the patient's time card into the LX time clock). Then to the right of the time clock entry, he will write the letter L or X to denote whether the patient was leaving to obtain Laboratory tests or X-Rays. The LX station operator will then return the time card to the patient and direct him to return to the LX station as soon as he returns to the clinic. When the patient returns, the LX station operator will enter the return time on the patient's time card and (in accordance with existing clinic policy) direct him to return to the receptionist, care provider, patient waiting area, etc., as appropriate.

(2) Distribute Exit Patient Satisfaction Questionnaire. The second task of the individual operating the LX station will be to pass out Patient Satisfaction Questionnaire IV (PSQ IV). All patients whose treatment has been completed (insofar as the patient has not been directed to return to the clinic later that day) will be directed to the LX station. There, the LX station operator will enter a time punch on their time cards and request that they complete a PSQ IV (which he will hand to them on a clipboard). Prior to handing them the clipboard, however, he will enter the 5-digit number of the patient's time card in the upper right-hand corner of the Questionnaire. The station operator will then indicate to the patient that when the questionnaire is complete he is to take it and the time card to the final time clock station, Station IX.

c. FX Station. The final time clock station employed in the study is the FX (Final eXit) station. The following tasks are involved.

(1) Collect Time Cards and PSQ IVs. The time cards and PSQ IVs and clipboards will be collected from all patients leaving the clinic whose examination/treatment has been completed for that day. (This will include all patients who have been referred to a specialty clinic for further evaluation and/or treatment as well as those who are leaving the clinic to obtain laboratory tests or x-rays and have either been instructed not to return--or are not anticipated to return--to the clinic again that day.)

(a) As the PSQ IVs are collected, the FX station operator is to glance briefly at the questionnaire to determine if the patient had made an effort to complete it. If it has not been completed, he is to politely request that they fill out at least items 13 through 16 (and while making this request, the FX attendant should make a check mark next to item numbers 13-16). If the patient declines, he is to request (again politely) that the patient fill out at least item 13. If the patient again declines, no further requests are to be made.

(b) The time cards and PSQ IVs are to be placed in separate containers.

(2) Return Clipboards. The empty clipboards will be returned to the LX station periodically (or as needed by the LX station) to insure that an adequate, continuing supply of same is available to be handed out by the LX station operator when the PSQ IVs are distributed.

III TIME CLOCK SYSTEM: SET UP AND CHECK-OUT

1. UNPACKING OF TIME CLOCKS. The time clocks are to be unpacked very carefully. All packing components must be retained by the APFE team since the APFE team will be required to repack the clocks themselves on the last Friday of the two-week visit.

2. SYSTEM CHECK-OUT AND SYNCHRONIZATION. Note: All clocks will have been pre-set to the correct data (Sunday) and an approximate time of 1000. Therefore, once the time clocks have been checked out, as indicated below, the time clocks must be set to the actual correct time and synchronized in order that the time and date be appropriate for use when activated for use on Monday, the first day of data collection.

a. Plug all clocks into the multiple plug outlet extensions that have been provided for your use (but do not yet plug in those multiple plug outlets into a wall socket).

b. When all time clocks have been plugged in, attempt to simultaneously plug in the multiple plug outlets with available wall sockets.

c. Using the time clock marked "RE" as the reference, synchronize the times of all clocks. This will be done by simultaneously inserting time cards into the RE time clock and one other and comparing the times indicated on the time cards. If adjustment is needed, adjust only the non-RE clock as indicated in the pamphlet provided at Inclosure 7. NOTE: The times may be manually advanced by removing the cover of the time clock, and turning the knob indicated in the pamphlet. They cannot be turned back in time manually. If one of the non-RE clocks is ahead of the RE time clock, you must simply unplug the non-RE time clock for an appropriate period of time (until the RE timeclock is ahead of the time clock in need of adjustment) and then manually advance the non-RE time clock to the time required to synchronize it. (The time clocks print out

times in hours and hundredths of an hour, e.g., 10.78, therefore, if a time clock is ahead of the reference (RE) timeclock, subtract two readings and multiply the difference in hundredths between them by 36 seconds to obtain the minimum amount of time that you must unplug the faster clock in order to insure that it will read the same as, or slower than, the reference (RE) time clock. If you err, it is better that you leave the initially faster time clock unplugged a little longer than necessary, for you want to insure that it will read slower than the reference time clock when plugged in again so that you can manually advance it to the correct time.)

d. Continue the synchronization process of each additional time clock with the RE time clock until all time clocks have been synchronized.

3. TIME CLOCK PLACEMENT. Using the floor plan of the clinic (Inclosure 8) as a reference, clear appropriate space upon a convenient desk or table located in the general areas indicated on the floor plan. Where the time clocks are to be utilized within an office, they should be placed on the care-provider's desk within an arm's reach of his normal chair position. In instances wherein they are to be placed in the halls between the rooms of care-providers, they should be placed upon small sturdy tables or stands (if available) or upon the ends of the shipping containers. (If the latter is the case, weight the shipping containers at the bottom to increase their stability. Use whatever "heavy" apparatus you can borrow from the clinic to achieve this end. The time clocks cost \$325.00 each. Place extension cords as required to provide electricity to the time clocks. Locate the extension cords in such a way as to minimize the likelihood of someone tripping on them or catching them on their feet and inadvertently unplugging them (thereby requiring subsequent

re-synchronization) or worse yet, pulling them off the stand/container and damaging them. If there is any possibility that such may occur, tape the extension cords in place, preferably at the intersection of the wall and the working positions on Sunday unless you are satisfied with the security arrangements that are in effect. (You are signed for the clocks.) If you are satisfied with the security arrangements, you may place them as required to begin operation on Monday morning.

IV TIME CARD RECORDING SYSTEM UTILIZATION

1. GENERAL.

a. The punch-card system is used to develop a description of the time parameters which are associated with patient care. The data which results from this system can be used to provide descriptions of various categories of patient service times, associated patient waiting times, and various queueing analyses as well as computerized models to estimate the effect of hypothetically varying some of the service parameters (e.g., increasing the number of physicians).

b. The system that is to be employed in the present study will require that a patient be given a "time card" at the time he* presents himself at the clinic. Thereafter he will carry the time card with him, having the times printed upon it at the various stations he passes through, until his treatment at the clinic has been "completed" for that day. At that time he will surrender the card. (For the purpose of the study, treatment will be considered to be "complete" at the time the patient leaves the clinic with no further instructions to return to the clinic that day.)

c. The time card of a patient who has been examined/treated in the clinic will involve a continuing sequence of "pairs" of entries. While it may not be the same at all facilities, the card for a representative visit (involving a laboratory test/x-ray and return to examiner) would be approximately as shown in Figure 1.

d. Insofar as the entries to be made are concerned, the point to be emphasized is that there must be a dual entry (In-Out) at each service/function point

*The word "he" is intended to include the male and female gender and that any exception to this will be so noted.

FIGURE 1
TIME CARD WITH SAMPLE ENTRIES

SITE_____ DAY OF WEEK_____ PT DISP_____	
CP INITIALS_____ CP CATEG. _____	
LAB REQD_____ X-RAY REQD_____	
CONSULTATION REQD_____	
ALGORITHM (CATEG ILLNESS)_____	
HEALTH PROGRAM SYSTEMS CENTER INDIAN HEALTH SERVICE, HSMHA	
Receptionist In	0 RE11 0862
Out	0 RE11 0872
Vital Signs In	0 VS11 0877
Out	0 VS11 0880
Exam/Trtmt In	0 AB11 0908
Out	0 AB11 0924
Lab/x-ray or In	0 LX11 1076
Consult Out	0 LX11 1076
Return to In	0 AB11 1084
Exam Out	0 AB11 1084
EXIT pro- In	0 FX11 1106
cedure Out	0 FX11 1110
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Nº 19256	

appearing on the card. The patient must be clocked in and out at the receptionist desk, at the vital signs station (if one exists), and by the physician or physician-extenders.

e. The system, at the individual level is simplistic: dual entries (in-out, make-break) are required to record (a) each instance wherein contact with a patient is made or broken, or (b) when consultative contact between a physician extender (e.g., AMOSIST) and a physician (e.g., AMOSIST MD) is initiated and completed.

(1) General AMOSIST Requirements. The AMOSISTs retain no time cards of their own. All entries are made upon the time cards of the patients they treat using either their own designated TREATMENT time clock (to record each instance patient contact is made or broken) or using the CONSULTATION time clock located in the AMOSIST MD's office (to record the onset and completion of each consultation with the AMOSIST MD.) (See Inclosure 2 and paragraph 4a.)

(2) General AMOSIST MD Requirements. The AMOSIST MD will have the same general requirement. However, as indicated below, he will make entries not only upon the time card of any patient he treats, but he will also make continuing entries on a CONSULTATION time card which he, himself, retains.

(a) Patient Time Card Entries. For any patient the AMOSIST MD assumes direct patient care responsibilities for (i.e., not consultative activities, but care for a patient who is referred to his own exam/treatment room for care), the AMOSIST MD will record, using his own TREATMENT time clock, each instance wherein contact with that patient is made or broken. (See inclosure 3 and para 4b(3).)

(b) CONSULTATION Time Card Entries. The AMOSIST MD will retain a CONSULTATION time card and will have a separate CONSULTATION time clock to be used to record his consultative activities each day. The onset and completion of each consultation provided an AMOSIST will be recorded by the AMOSIST MD on his CONSULTATION time card using his CONSULTATION time clock. (Such apply to consultations which are completed within the confines of the AMOSIST MD's office. In instances wherein the AMOSIST MD must leave his office to actually examine an AMOSIST's patient to appropriately render the consultation requested, two additional intermediate entries (start-finish) must be made on the CONSULTATION time card using the AMOSIST's time clock.) (See Inclosure 4 and paragraph 4b(2).)

2. RECEPTIONIST ENTRIES.

When the patient arrives at the clinic to be logged in, the designated study assistant (or the receptionist--as locally agreed upon) will first insert the card into the time clock for the first entry. It is then removed and the patient is "logged in." Immediately after the patient has been "logged in," the patient's time card will be punched a second time prior to being sent to the patient waiting area or to the vital signs station.

3. VITAL SIGNS ENTRIES.

These entries will be required only in clinics wherein a separate station is employed (subsequent to being logged in at the receptionist desk) for the purpose of obtaining a patient's "vital signs" prior to being examined and treated. ("Vital signs," for the purpose of this study, are to be considered as measures of one or more of the following: Temperature, Blood Pressure, Pulse Rate, or Respiration Rate.) Two entries are required. The first is to record the time the patient is seated at the station just prior to the time the vital signs are actually taken. The second is after the measurements have been completed and recorded in the patients records and he is about to leave the station. These two entries will be coded as "VS" entries on the patient's time card.

4. ACUTE MINOR ILLNESS CLINIC (AMIC) ENTRIES.

a. AMIC Care-Provider Entries: AMOSISTs. An entry must be made onto the patient's time card from the time clock designated for use by the care-provider at each of the following times:

(1) Initiation. The first entry made by an AMOSIST is at the time the examination/treatment begins. (Note: This does not mean the time the patient enters the exam room if, in fact, the care provider is not present and ready

to begin treatment at that time; it is meant to reflect the time AMOSIST-patient interaction actually begins. Hence, if it is a clinic practice to direct the patient to an exam room to await the arrival of the AMOSIST, the time clock is not to be punched until the AMOSIST arrives and actually begins the evaluation of the patient.

(2) Consultation, lab/x-ray (conditional entries). Additional entries are required if direct patient contact is interrupted by the AMOSIST when he leaves the patient for the purpose of obtaining consultation from the AMOSIST MD or when the patient leaves to obtain laboratory tests or x-rays.

(a) When consultation is required, an AMOSIST will take the patient's time card with him when he leaves the exam room (after he has punched it with the time-clock designated for his own use) to seek the AMOSIST MD for consultation purposes. The AMOSIST will enter a punch from the AMOSIST MD's CONSULTATION time clock located in the AMOSIST MD's exam room, at the time (i.e., just before) he begins to speak directly with the AMOSIST MD regarding the patient. (If the physician is not in his office/exam room at that time, it is requested that, for the two-week duration of the study, the AMOSIST wait at or in the AMOSIST MD's office until he returns.) As soon as the consultation is completed, the AMOSIST is to enter a second punch from the CONSULTATION time clock on the patient's time card. (In order for the computerized calculations to be performed, it is necessary that the second punch be obtained from the CONSULTATION time clock; hence, even if the physician actually returns to the AMOSIST exam room to examine the patient himself as part of his consultation, it will be necessary for the AMOSIST to return to the CONSULTATION time clock to obtain the second, required entry from that clock prior

to re-entering his exam room to effect further examination/treatment, to send him for needed x-rays or laboratory tests or to effect final disposition of the patient. The last listed includes referring him elsewhere; e.g., to the AMOSIST MD himself or to another clinic, as appropriate. If further examination/treatment involved laboratory tests and for x-rays, see following paragraph.

(b) If it is determined that the patient will require "same day" laboratory tests or x-rays, the AMOSIST is to enter an "exit" time from his own designated time clock and return the time card to the patient. He is then to direct him to the study support person located at station "LX." There, that person will punch the patient's time card and mark thereon that the individual was leaving for the purpose of obtaining an x-ray or laboratory tests.

(c) A "return" entry is required subsequent to any consultation or lab/x-ray work at the time the individual AMOSIST-patient contact is reestablished. This is an entry from the AMOSIST's own time clock.

(3) Completion. The last entry required by an AMOSIST is rendered at the time final disposition of the patient (from the care-provider's jurisdiction for that day) is completed. For an AMOSIST's purpose, this will occur at the time he completes his treatment/examination of the patient and the patient exits from his office with (a) a recommended "final" treatment program and/or pharmacy prescription, (b) instructions to see the AMOSIST MD for further evaluation/ treatment (i.e., a referral to the AMOSIST MD), (c) instructions (and a referral slip) to make an appointment with, or go directly to, another separate clinic, e.g., specialty clinic, for further evaluation and treatment (i.e., a clinic

referral), or (d) instructions to make an appointment for deferred x-rays or laboratory tests or to obtain initial laboratory tests which will require a subsequent delayed analysis (e.g., a culture). The schematicized results of the most simplified and the most complex instances are present in Figures 2 and 3, respectively.

b. AMIC Care Provider Entries: AMOSIST MD.

(1) General. The AMOSIST MD serves in three principal roles. One is as the primary medical consultant to the AMOSISTs, the second is as a referral source to be utilized by AMOSISTs, i.e., a source of medical care to whom AMOSISTs themselves can refer patients directly when the medical condition of the patient is such that they, as AMOSISTs, can no longer provide the care required. The third principal role is that of a direct patient care provider for patients triaged to the AMIC whose condition is such that they are referred directly to the AMOSIST MD upon their arrival at the AMIC (or for the patient who specifically declines treatment by an AMOSIST and requests to see an MD). At some facilities there may be more than one AMOSIST MD in the AMIC. At these locales, one of the AMOSIST MDs may function entirely in the role of the consultant to the AMOSISTs while the other AMOSIST MD assumes the roles of direct patient care provider and referral-source for patients initially examined by an AMOSIST. In most facilities, however, there is but one AMOSIST MD present. He assumes all three roles. The use of the time clock/punch card system by an AMOSIST MD will be determined by the role he is assuming. These are described below.

(2) AMOSIST MD Serves in Consultant Role. Each AMOSIST MD will retain a separate "CONSULTATION" time card(s) upon which he will record all consultations

SITE _____	DAY OF WEEK _____	PT DISP _____	
CP INITIALS _____	CP CATEG. _____		
LAB REQD _____	X-RAY REQD _____		
CONSULTATION REQD _____			
ALGORITHM (CATEG ILLNESS) _____			
HEALTH PROGRAM SYSTEMS CENTER INDIAN HEALTH SERVICE, HSMHA			
O O O O O O O O O	RE16 0755 RE16 0753 VS16 0760 VS16 0764 AB16 0790 >>>>>>>>>>>>>>>> AB16 0802 FX16 0804 FX16 0810	AMOSIST's Entries	

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* Neither Consultation
nor lab/x-ray support
required.

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AMOSIST PROGRAM FIELD EVALUATION PHYSICIAN SAVINGS AND COST EFF--ETC(U)
AUG 78 A W SCHOPPER

HCSD-78-002-B

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AMOSIST ENTRIES: MOST COMPLEX CASE*

Receptionist In
Out
Vital Signs In
Out
Initial Exam In
Out
Consult AM MD In
Out
Return, Order Tests In
Out
Obtain Lab Test In
Out
AMOSIST Checks In
Lab Results Out
Consult AM MD In
Out
AMOSIST writes In
Rx/Treatment Out
EXIT Procedure In
Out

SITE _____ DAY OF WEEK _____ PT DISP _____
CP INITIALS _____ CP CATEG. _____
LAB REQD _____ X-RAY REQD _____
CONSULTATION REQD _____
ALGORITHM (CATEG ILLNESS) _____

HEALTH PROGRAM SYSTEMS CENTER
INDIAN HEALTH SERVICE, HSMHA

CODE

0	RE16 0722	(RE)
0	RE16 0725	
0	VS16 0727	(VS)
0	VS16 0729	
0	AC16 0740	(AC)
0	AC16 0752	
0	CO16 0768	(CO)
0	CO16 0780	
0	AC16 0784	(AC)
0	AC16 0788	
0	LX16 0780	(LX)
0	LX16 0910	
0	AC16 0922	(AC)
0	AC16 0930	
0	CO16 0958	(CO)
0	CO16 0966	
0	AC16 0972	(AC)
0	AC16 0984	
0	FX16 0988	(EX)
0	FX16 1004	

*Treated by AMOSIST, AMOSIST MD consultation required followed by recommended lab test (e.g., blood count,). return to AMOSIST, second consultation required with AMOSIST MD, final disposition rendered by AMOSIST.

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FIGURE 4

AMOSIST MD CONSULTATION CARD

Consult Requested
 " Completed
 Consult Requested
 " Completed
 Consult Requested
 MD Examines Patient
 MD Completes Exam
 Consult Completed
 Consult Requested
 " Completed
 Consult Requested
 " Completed
 Consult Requested
 " Completed
 Consult Requested
 MD Examines Patient
 MD Completes Exam
 Consult Completed
 Consult Requested
 MD Examines Patient
 MD Completes Exam
 Consult Completed

AMOSIST MD CONSULTATION CARD

NAME: _____

DATE: _____

 HEALTH PROGRAM SYSTEMS CENTER
 INDIAN HEALTH SERVICE, HSMHA

		Comments:
0	CO26 07.40	
0	CO26 07.52 <i>SL</i>	
0	CO26 07.64	
0	CO26 07.68 <i>RT</i>	Consult completed within office.
0	CO26 07.76	
0	AC26 07.78	
0	AC26 07.90	Consult requiring exam of patient
0	CO26 07.92 <i>LB</i>	
0	CO26 08.08	
0	CO26 08.12 <i>JL</i>	Initials of AMOSIST Requesting consult
0	CO26 08.20	
0	CO26 08.25 <i>BN</i>	
0	CO26 08.44	
0	CO26 08.56 <i>CH</i>	
0	CO26 08.96	
0	AA26 09.00	
0	AA26 09.16	
0	CO26 09.20 <i>RT</i>	
0	CO26 09.42	
0	AC26 09.48	
0	AC26 09.62	
0	CO26 09.65 <i>LB</i>	

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requested of him. Consultations may involve two levels of participation on the part of the AMOSIST MD. Each is to be recorded in a separate fashion. (Figure 4 illustrates the entries required for consultation activities.)

(a) Level 1 Consultations.

1. Description: Record reviews, interpretations, authorizations for pharmacy prescriptions. These refer to instances wherein the AMOSIST merely requests assistance or counsel which can be rendered by the AMOSIST MD without requiring direct, face-to-face interaction with, or examination of, the patient and which can be completed within the AMOSIST MD's own office/exam room. Such may entail requests by the AMOSIST for assistance in reviewing and deciphering or interpreting previous entries in the patient's medical records, or authorizing the use of a drug which is being prescribed.

2. Study Requirements: For Level 1 Consultations, the AMOSIST MD will, at the start of the consultation, insert his own CONSULTATION time card into the CONSULTATION time clock to record the time at which the consultation begins. (Such will result in a "CO" entry on the card.) Immediately after the consultation is completed, the CONSULTATION time card is to be re-inserted into the CONSULTATION time clock to record the time at which the consultation is finished. The AMOSIST MD is then to identify the AMOSIST requesting the consultation by entering the AMOSIST's initials to the right of the second time-card entry. In sum, for this level of consultation, all that is required to appear on the AMOSIST MD's CONSULTATION time card are two "CO" entries (beginning and ending times) and the initials of the requesting AMOSIST.

(b) Level 2 Consultations.

1. Description: Direct patient examination required. Level 2 consultations will require more AMOSIST MD involvement. This will result when the nature of the consultation requested is such that the AMOSIST MD will be required to clinically examine the patient himself in order to appropriately render the assistance required.

2. Study Requirements: At the time the consultation begins, the AMOSIST MD is to insert his own CONSULTATION time card into the CONSULTATION time clock (resulting in a "CO" coded entry) to record the start of the consultation. Once it is determined that a direct examination of the patient is required, the AMOSIST MD will take his own CONSULTATION time card with him and immediately prior to the time he begins the examination of the patient, insert it in the AMOSIST's time clock (resulting in an A_ coded entry) to record the beginning time of the consultative patient examination. When the patient examination is complete and the related consultation activities conducted within the AMOSIST's office finished, the AMOSIST MD will re-insert his CONSULTATION time card into the AMOSIST's time clock to record the termination of that portion of the consultation. When the AMOSIST MD returns to his own office he will complete the consultation (i.e., write out any prescriptions required or render any additional instruction to the AMOSIST—if, in fact, either of these were not performed while in the AMOSIST's office—and insert his CONSULTATION time card into his CONSULTATION time clock to record the time at which the consultation is finished. As in Level 1 consultations, he will then identify the AMOSIST requesting the consultation by entering the requesting AMOSIST's initials on the CONSULTATION time card to the

right of the last "CO" entry. In sum, a Level 2 consultation requires four time clock entries (CO, start consult; A_, start exam; A_, finish exam; and CO, finish consult) plus the initials of the AMOSIST requesting the consultation.

(3) AMOSIST MD Serves as Direct Patient Care Provider. The AMOSIST MD, while serving in either the role of the initial patient care provider to a patient triaged to the AMIC or as the secondary care provider (i.e., the recipient initially examined by an AMOSIST and subsequently referred to the AMOSIST MD for completion of evaluation/treatment) will be required to utilize the patient's time care in much the same manner as an AMOSIST. Time clock entries will be required at the time the patient enters the office and the examination/treatment begins (the AMOSIST MD will insert the patient's time care into his TREATMENT time clock) and when the examination/treatment is completed or when the patient has to leave to obtain laboratory tests or x-rays. (See para 4a(2)(b).) A typical sequence of time card entries required for a patient (treated by an AMOSIST MD) who did require a laboratory test and subsequently returned for completion of treatment is shown in Figure 5. NOTE: The entries required by an AMOSIST MD for a patient who initially was first examined by an AMOSIST and has subsequently been referred to the AMOSIST MD are the same as those outlined above. The only differences would be that several AMOSIST coded time clock entries would appear on the patient time card prior to the time the patient arrived at the AMOSIST MD's office. (See Figure 6.)

c. AMIC Care Provider Entries: AMOSIST MD in Combined Role: Care Provider and Consultant to AMOSIST:

(1) General. In this instance, the AMOSIST MD will have to make entries on two types of cards. One set of entries would be those on his own continuing

FIGURE 5

TIME CARD WITH SAMPLE ENTRIES

Receptionist In
Out
Vital Signs In
Out
Exam/Trtmt In
Out
Lab/x-ray or In
Consult Out
Return to In
Exam Out
EXIT pre- In
cedure Out

SITE _____ DAY OF WEEK _____ PT DISP _____	
CP INITIALS _____ CP CATEG. _____	
LAB REQD _____ X-RAY REQD _____	
CONSULTATION REQD _____	
ALGORITHM (CATEG ILLNESS) _____	
HEALTH PROGRAM SYSTEMS CENTER INDIAN HEALTH SERVICE, HSMHA	
0	RE11 0862
0	RE11 0872
0	VS11 0877
0	VS11 0880
0	DB11 0908
0	DB11 0924
0	LX11 1076
0	LX11 1076
0	DB11 1084
0	DB11 1084
0	FX11 1106
0	FX11 1110
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FIGURE 6

AMOSIST MD ENTRIES FOR PATIENT INITIALLY SEEN BY AMOSIST
-PATIENT SUBSEQUENTLY REFERRED TO AMOSIST MD

Receptionist In
" Out
Vital Signs In
" Out
AMOSIST Initial Exam
" Seeks consult
Consultation begins
" Completed
AMOSIST sees patient again
" refers patient to MD
AMOSIST MD see patient
" " completes treatment
Patient Exit In
" " Out

SITE _____ DAY OF WEEK _____ PT DISP _____ CP INITIALS _____ CP CATEG. _____ LAB REQD _____ X-RAY REQD _____ CONSULTATION REQD _____ ALGORITHM (CATEG ILLNESS) _____		
HEALTH PROGRAM SYSTEMS CENTER INDIAN HEALTH SERVICE, HSMHA		
O RE27 15.75 O RE27 15.82 O VS27 15.88 O VS27 15.92 O AB27 16.44 O AB27 16.50 O CO27 16.58 O CO27 16.66 <i>TS</i> O AB27 16.72 O AB27 16.75 O DA27 16.78 O DA27 16.82 O FX27 16.98 O FX27 17.14	> Duration of initial AMOSIST contact > Duration of AMOSIST MD Consultation > AMOSIST refers Pt. > AMOSIST MD treats Patient	
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CONSULTATION card (upon which he enters all consultative activities); the other would consist of entries which would have to be made upon the patient's time card to reflect his efforts in support of care provided to a patient that has been transferred or referred to him for evaluation and treatment.

(2) Study Requirements. The entries on these two sets of cards are the same as those discussed in the prior two sections, i.e., consultations will be recorded by the AMOSIST MD on his own CONSULTATION cards, and for patients treated by the AMOSIST MD, appropriate entries will be made upon patient-retained time cards. The additional entries required as a result of having to serve in a dual role are those to be entered upon the patients' time cards to denote instances wherein the ongoing examination/treatment of the AMOSIST MD's patient has been interrupted by a consultative activity requested by an AMOSIST. The two required additional entries on the AMOSIST MD patient's time card are the following:

(a) When the need for consultation arises and that consultation is provided while the AMOSIST MD's patient remains in the examination room, the AMOSIST MD's patient's time card will be punched twice just prior to rendering the requested consultation.

(b) When the consultation is complete, the patient's (the physician's patient) time card is to be re-inserted twice into the time clock to denote that the intrusive consultation is complete and the patient's own evaluation/treatment has resumed. (NOTE: Following either a. or b. above, the physician is to identify the individual to whom he provided the consultation by writing (on his own patient's card) the letters "CO" (consultation) followed by the initials of the requesting AMOSIST immediately to the right of the second of these two consultation time card entries. See sample at Figure 7.)

FIGURE 7

AMOSIST MD TIME CARD ENTRIES: CARE OF MD'S PATIENT
INTERRUPTED BY IMMEDIATE CONSULTATION TO AMOSIST

Receptionist In
" Out
Vital Signs In
" " Out
MD Initiates Eval of Own Pt
Immediate Consult Req'd Md
leave own patient.
Consultation completed
MD resumes care of own Pt
Treatment of own Pt completed
Patient Exit In
" " Out

SITE _____ DAY OF WEEK _____ PT DISP _____ CP INITIALS _____ CP CATEG. _____ LAB REQD _____ X-RAY REQD _____ CONSULTATION REQD _____ ALGORITHM (CATEG ILLNESS) _____		
HEALTH PROGRAM SYSTEMS CENTER INDIAN HEALTH SERVICE, HSMHA		
	0 RE14 08.62 0 RE14 08.72 0 VS14 08.77 0 VS14 08.80 0 DA14 09.14 0 DA14 09.22 0 DA14 09.22 0 DA14 09.40 0 DA14 09.40 <i>CO-25</i> 0 DA14 09.62 0 FX14 09.62 0 FX14 09.66	<u>COMMENTS:</u> >> Double entry denotes start of consult. >> Second double de- notes completion of consult for AMOSIST "BT"
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FIGURE 8

GOC CARE PROVIDER TIME CARD ENTRIES:
NO LAB, X-RAY OR CONSULTATION REQUIREMENTS

Receptionist In
" Out
Vital Signs In
" " Out
GOC Physician In
" " Out
Patient Exit In
" " Out

SITE _____ DAY OF WEEK _____ PT DISP _____ CP INITIALS _____ CP CATEG. _____ LAB REQD _____ X-RAY REQD _____ CONSULTATION REQD _____ ALGORITHM (CATEG ILLNESS) _____		
HEALTH PROGRAM SYSTEMS CENTER INDIAN HEALTH SERVICE, HSMHA		
O RE12 13.75 O RE12 13.80 O VS12 13.86 O VS12 13.92 O DB12 14.14 O DB12 14.28 O FX12 14.32 O FX12 14.45	<u>COMMENTS:</u> > Physician's Entries	
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No 19256		

5. GENERAL OUTPATIENT CLINIC (GOC) ENTRIES.

a. GOC Care Provider Entries: Physicians.

(1) General. The general sequential model which is assumed is that in which a patient is logged in at a receptionist's desk, vital signs are taken at a separate station (or are taken by a nurse or corpsman upon entering the exam room while awaiting the arrival of the principal care provider) and care (examination and treatment/drug prescription or referral) is provided by a physician.

(2) Study Requirements. It is envisioned that two major sequences at time-card entries will constitute the format required for the majority of the patients treated. In the event that some form of physician extender is also employed in the clinic, and that extender requests consultation that disrupts the ongoing evaluation/treatment of a patient, a third sequence will also be evidenced. These three configurations of time-card entries are discussed below:

(a) Treatment Without Need for Laboratory/X-Ray Support or Consultation. The physician is simply required to make two entries on the patient time card. (See Figure 8.)

1. Initiation: At the time evaluation/treatment begins, the physician is to insert the time card into the time clock in his office.

2. Completion: After the examination is completed and all drug prescriptions and written or verbal instruction to the patient is completed, the physician is to re-insert the time card into the time clock to record the time at which treatment is terminated (i.e., just before the patient leaves the exam room). NOTE: The time-card is to be returned to the patient at that time. The physician should, at that time, direct the patient to return to time clock station "LX."

(b) Treatment With Laboratory Test and/or X-Rays Required. In this instance, there will be a minimum of six entries required, four of which will be rendered by the physician. (See Figure 9.)

1. Initiation: Treatment/evaluation begins.

2. Exit for Lab/X-Ray: At the time the patient leaves the physicians office to obtain the lab test/x-ray. The physician is to then direct the patient back to time clock station "LX." (Time-card is returned to patient.)

3. LX Out: A time-clock entry will be made at station "LX" to indicate the time the patient left the clinic for his lab test/x-ray. (The patient will be directed to return to station immediately upon his return to the clinic after he has obtained his lab/x-ray services.)

4. LX Return: Upon returning to the clinic, the patient will report to station LX for another time clock entry to denote his return.

5. Re-Initiation: At the beginning of the time the physician again sees the patient to assess the results of the lab tests/x-rays, the patient's time card will be punched.

6. Completion: The final entry to the patient time card will be made immediately prior to the exit of the patient from the physician's office after the completion of the writing of all pharmaceutical prescriptions and the rendering (verbal and/or written) of treatment instructions to the patient (as in paragraph 5.a.(2)(a)2., above).

(c) Treatment Interrupted By Need To Provide Consultation. NOTE: The following example applies in the instance wherein some sort of physician extender is employed in the clinic to provide some level of care and that the physician extender has occasional need for consultation with a physician in

FIGURE 9

GOC CARE PROVIDER TIME CARD ENTRIES:
LABORATORY TEST REQUIRED

Receptionist In
" Out
Vital Signs In
" " Out
Initial MD Exam
Patient leaves MD office
Patient leaves clinic for Lab
Patient returns to clinic
MD Resumes Exam
MD Completes treatment
Patient Exit In
" " Out-leaves clinic

SITE _____ DAY OF WEEK _____ PT DISP _____ CP INITIALS _____ CP CATEG. _____ LAB REQD _____ X-RAY REQD _____ CONSULTATION REQD _____ ALGORITHM (CATEG ILLNESS) _____	
HEALTH PROGRAM SYSTEMS CENTER INDIAN HEALTH SERVICE, HSMHA	
0 RE08 14.22 0 RE08 14.30 0 VS08 14.38 0 VS08 14.48 0 DA08 14.86 0 DA08 14.92 0 LX08 14.98 0 LX08 15.75 L. 0 DA08 15.92 0 DA08 16.04 0 FX08 16.06 0 FX08 16.20	<u>COMMENTS:</u> >> MD's Initial Eval lab test needed >> Entries by LX sta "L" denotes lab test >> MD completes eval/ treatment
B-071833 SIMPLEX TIME RECORDER CO., GARDNER, MASS., PRINTED IN U.S.A.	
N ^o 19256	

order to complete his evaluation/treatment of the patient he is treating or that the physician must occasionally respond to a call for assistance from emergency room. The following entries are required. (See Figure 10)

1. Initiation: At the time evaluation/treatment begins.

2. Consultation Started: When the need for consultation arises and that consultation is provided while the physician's patient being treated remains in the examination room, the patient's (physician's patient) time card will be punched twice just prior to providing the requested consultation.

3. Consultation Finished: When the consultation is complete, the (physician's) patient's time card is to be re-inserted twice into the time clock to record that the intrusive consultation is complete and that the evaluation/treatment has resumed. NOTE: Following either 2. or 3. above, the physician is to identify the individual to whom he provided the consultation by writing (on his own patient's card) the letters "CO" (consultation) or "ER" (to signify response to an emergency room call) followed by the initials of the consultee immediately to the right of the second consultation time card entry (see sample at Figure 9).

4. Completion: The last entry is entered, as before, when the examination/treatment is complete, just prior to the exit of the patient from the examination room.

b. GOC Care Provider Entries: Nursing Personnel

(1) General: It is anticipated that the nursing personnel working in a General Outpatient Clinic will not be assigned to support a single, specific examination room; but rather that they would work, as needed, in any of the examination/treatment rooms in the clinic. As such, the nursing personnel will have to record their involvement with the patient by using the coded time clock that is in the exam room and annotate the entries accordingly.

FIGURE 10

GOC PHYSICIAN ENTRIES: CONSULTATION PROVIDED TO
PHYSICIAN EXTENDER INTERRUPTS TREATMENT OF OWN PATIENTS

Receptionist In
" Out
Vital Signs In
" " Out
MD Initiates patient eval.
Immediate consult req'd
MD leaves own patient
Consult completed, MD re-
sumes care of own patient
Treatment of MD's Pt completed
Patient Exit In
" " Out

SITE _____ DAY OF WEEK _____ PT DISP _____ CP INITIALS _____ CP CATEG. _____ LAB REQD _____ X-RAY REQD _____ CONSULTATION REQD _____ ALGORITHM (CATEG ILLNESS) _____		
HEALTH PROGRAM SYSTEMS CENTER INDIAN HEALTH SERVICE, HSMHA		
0 RE17 09.55 0 RE17 09.58 0 VS17 09.74 0 VS17 09.82 0 DA17 10.26 0 DA17 10.36 0 DA17 10.36 0 DA17 10.54 0 DA17 10.54 <i>CO-EJ</i> 0 DA17 10.78 0 FX17 10.82 0 FX17 10.98	>>Double entry de- notes start of consult >>Second double de- notes consult completed "CO EJ" denotes Consult provided to indiv with initials <u>EJ</u>	
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Nº 19256		

(2) Study Requirement: Nursing personnel will be required to make two entries each time they enter an examination/treatment room to perform a nursing function. (See Figure 11.)

(a) Entrance: At the time the nurse enters the room, he/she will insert the patient's time card into the time clock and, to the right of the time clock entry, print the letters "NU" followed by their initials.

(b) Exit: At the time the nurse leaves the exam room, she/he will re-insert the patient's time card into the time clock to record the time at which the direct involvement with that patient was completed. (NOTE: If it is the case that a nurse would have to leave the exam room momentarily to obtain additional apparatus, forms, etc., that would be subsequently utilized in the direct exam/treatment of a patient, he/she should not "punch out" and then "punch in" again to reflect that brief (e.g., two minutes or less) absence—rather, it is to be considered as if the contact had been continuous and he/she remained in direct contact with the patient throughout the entire time.)

c. General Outpatient Clinic Care Providers: Physician Extenders

(1) General. The entries required of physician extenders employed in General Outpatient Clinics are largely the same as those required of a physician. The principal difference is that physician extenders may require consultation with physicians in order to complete the evaluation/treatment of a patient. As a result, four additional entries on their patients' time card(s) are required to document the consultation. These additional entries are described in the asterisked (*) portions of the description provided below. (Entries required to reflect laboratory test/x-ray support are the same as those required by a physician.)

FIGURE 11

GOC NURSES' ENTRIES

Receptionist In
 " Out
 Vital Signs In
 " " Out
 Nursing care begins
 " " ends
 MD Evaluation begins
 MD treatment completed
 Patient Exits In
 " " Out

SITE____DAY OF WEEK____PT DISP____
 CP INITIALS____CP CATEG.____
 LAB REQD____X-RAY REQD____
 CONSULTATION REQD____
 ALGORITHM (CATEG ILLNESS)____

HEALTH PROGRAM SYSTEMS CENTER
 INDIAN HEALTH SERVICE, HSMHA

0 RE18 10.26	COMMENT: >> Entries by <u>N</u> urse whose initials are <u>SF</u>
0 RE18 10.30	
0 VS18 10.45	
0 VS18 10.50	
0 DC18 10.62	
0 DC18 10.74 NU-SF	
0 DC18 10.95	
0 DC18 11.08	
0 FX18 11.12	
0 FX18 11.16	

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(2) Study Requirements. The following entries are those which are to be entered onto the patient's time card(s):

(a) At the time the examination/treatment begins.

*(b) The time at which the physician extender leaves the patient to seek consultation.

*(c) The time at which the consultation begins. (Note: This entry is to be made by inserting the Physician Extender patient's time card into the Physician's time clock at the time the consultation actually begins.)

*(d) The time at which the consultation ends. (Again, this entry is made using the Physician's time clock.)

*(e) The time the Physician Extender returns to his/her own exam/treatment room and resumes the examination/treatment of the patient.

(f) The time the examination/treatment of the patient is completed; just prior to the time the patient exits the exam room.

6. POTENTIAL PROBLEMS AND SOLUTIONS.

a. Forgotten punches: In the event an individual forgets to enter a time onto the card, he is to estimate the actual time (hour and minute in military time) of the missing entry. (NOTE: Although the entries from the time clock appear in one-hundredths of an hour, the individual should make the needed entries in military time rather than attempt to make the conversion to the time-clock representation. Study personnel will subsequently enter the appropriately converted value.)

b. Enters Incorrect Punch or Multiple Punches Occur: Simply draw a line through the incorrect or duplicate punch.

c. Time Card Becomes Full, No Further Room For Entries: Simply turn the card around and use the "reverse" side. (This should not occur within the present system when all is working correctly. It may occur during the initial days of the study, however, if there are many erroneous entries made on the card of a complex case.

d. More Than One Consultant is Available At an AMIC: If there is more than one consultant at an AMIC, the CONSULTANT clock will have to be centrally located among them and the AMOSISTS will have to annotate their cards to indicate which consultant they utilized. (The annotation is to appear immediately to the right of the "CO" entries on the card. The annotation should consist of some readily interpretable, easily remembered two-letter code, e.g., Dr. Jones could be "DJ." (Consult the AMOSISTS to determine what seems easiest to them--for it may be that they refer to Dr. Jones as Major Jones, in which case you would use "MJ.") Whatever is agreed upon, insure that there are no duplicates among the codes employed.

e. Time Clock Fails: Request that you (the study team member in charge) be notified promptly. Direct that the individuals temporarily make the entries that would have been made on that clock by writing in the code of that clock followed by the military time of the entry (i.e., simply simulate the entry that would have resulted from the time clock. Then replace the malfunctioning clock with one of the extra clocks provided and record the time and the date that the replacement clock was put into service, the two-letter code of the replacement clock, and, finally, the two-letter code of the malfunctioning clock it replaced. (NOTE: When replacing the clock, insure the newly installed clock is synchronized with the other time clocks in use in the clinics.) That evening, remove the top of the new clock and correct its code so that it reads the same as the clock it replaced. Re-synchronize it after it has been re-coded.) (ADDITIONAL NOTE: If

the number of time clock malfunctions is such that you do not have further replacement time clocks, you will have to "double up" on the usage of available working time clocks, i.e., set a time clock on a stand between two adjacent treatment rooms and ask that both care providers use it.)

NOTE: At Inclosure 9 is a copy of a SIMPLEX repair manual for these time clocks.

If needed, you might ask local medical maintenance personnel for assistance.

V UPPER PORTION TIME CARD ENTRIES

1. GENERAL. The upper portion of each time card will have to be completed on-site by clinic personnel. The first two items (SITE and DAY OF WEEK) are to be completed by the APFE team member operating the RE (receptionist) time clock station. The remainder of the entries will have to be made by the care provider.

2. DATA REQUIRED. The data required on the upper portion of the time cards are shown below in the same format as they appear on the card:

SITE _____ DAY OF WEEK _____ PT DISP _____
CP INITIALS _____ CP CATEG. _____
LAB REQD _____ X-RAY REQD _____
CONSULTATION REQD _____
ALGORITHM (CATEG. ILLNESS) _____

3. ENTRY CODES. The codes to be used to enter data on the upper portion of the time cards are shown below. (At Inclosure 1 are twelve copies of a more usable graphic presentation of these codes. The senior HCSD team member is to distribute one of each of these "code sheets" to each primary care provider in the clinic.)

TIME CARD DATA ENTRY CODES

SITE: 1 = Ft. Leonard Wood 4 = Ft. Benjamin Harrison
2 = Ft. Benning 5 = Ft Huachuca
3 = Ft. Bragg 6 = Ft Monmouth

DAY OF WEEK:

1 = Monday 4 = Thursday
2 = Tuesday 5 = Friday
3 = Wednesday

PT.DISP: (Patient Disposition)

1 = Evaluation/Treatment completed within clinic.

If further evaluation/treatment required, patient referred to:

2 = Orthopedics 7 = Urology
3 = Physical Therapy 8 = Dermatology
4 = OB/GYN 9 = Internal Med, Gen Med, ER Physician
5 = ENT 0 = Other
6 = Ophthalmology

CP INITIALS (Care Provider's Initials):

The initials of the care provider.

CP CATEG (Care Provider's Category):

1 = Physician 4 = AMOSIST
2 = Physician Assistant 5 = Other
3 = Nurse Clinician

LAB REQD (Laboratory Tests Required):

- | | |
|-----------------|--|
| 1 = <u>None</u> | 4 = Bacteriological (to include throat Culture |
| 2 = Blood | 5 = Some combination of 2, 3, 4 |
| 3 = Urine | |

X-RAY REQD (X-Ray Required):

- 1 = No
2 = Yes

CONSULTATION REQD (Consultation Required):

- 1 = No
2 = Yes (On a time card completed by a physician, a Yes entry would be used only if a requested consultation interrupted the on-going treatment of his own patient.)

ALGORITHM (CATEG ILLNESS):

- | | |
|----------------------------|--------------------------------|
| 1 = Eye | 6 = Musculo-Skeletal Extremity |
| 2 = Respiratory | 7 = Skin - Regional |
| 3 = Gastrointestinal | 8 = Skin - General |
| 4 = Genitourinary | 0 = Other |
| 5 = Musculo-Skeletal Spine | |

VI COPYING OF CLINICAL ENTRIES

1. General. A very significant part of the APFE study involves the duplication (e.g., xerox) of the medical record forms (SF 600 or AMIC Data Collection Sheets) of patients who have been treated in the clinics being evaluated. The requirement applies to two separate study populations.

a. A previously identified "retrospective" sample of patients who have been treated in the clinic between the 4th and 6th weeks prior to the arrival of the APFE team.

b. A 100 percent sample of those treated in the clinic during the course of the on-site evaluation.

The duplications process, in both instances, includes the requirement that the name and SSN of each patient be obliterated from each patient record form prior to enclosing it in the folders to be returned to HCSD for subsequent examination. For both of the above patient samples, it may be that all duplication will have to be performed after duty hours. The procedures to be employed for each of these samples is described below. (Note: The Health Services Command (HSC) has already formally identified these requirements to the MEDDACs, reference Inclosure 10)

2. Retrospective Sample.

a. Location of Records. The records for these patients are to be obtained from the Medical Records room.

b. Identification of Sample Records. These records have been marked on the reverse side, near the top left hand corner with a black felt tip pen to facilitate their identification (see sample, Inclosure 11). If these marks prove to be inaccessible, the clinic will also have on hand a "log" of all

patients treated during the aforementioned 3 week period which can be used to identify the patients either by name or SSN (Note: Only the records of patients who have actually been examined and treated in the clinic will have been marked. Those who have been seen in the clinic for the sole purpose of obtaining a routine refill of their pharmacy prescriptions will not have been marked. In the event patients have to be identified from the patient log which was kept, only those patients who have the code letter "T" (treated) or "TR" (treated referred) are of interest to the present study. Those marked with an "R" constitute those who came in for the renewal of a prescription and are, hence, excluded from consideration in the study).

c. Required Sample. The desired number of patients' records to be included in the retrospective population is 500. (This is the number of patients whose records are to be included in the study; the number of pages required on each patient may be 2 or more if the patient has made previous or subsequent visits to a clinic for treatment within 14 calendar days of the initial visit occurring during the designated three week study period. (See following paragraph.)

d. Duplication Requirement.

(1) General. Each identified record will have to be examined to determine the date of the initial entry to the clinic (between and 1977.) Once this clinic visit, the "referent visit," is located, it is to be copied. The record is then to be scanned to determine if (a) the referent visit had been preceded by one or more visits to the same clinic within 14 calendar days prior to the occurrence of the referent visit for the same or a related illness. (Note: The phrase "same or a related illness"

should be very broadly interpreted. It is simply meant to exclude from consideration any prior or subsequent visits which are for obviously unrelated, different medical problems, e.g., a "cold" or the "flu" versus a "sprained ankle." All instances wherein the visits are not clearly and obviously different should be duplicated and returned to the HCSD for a professional medical opinion.) In each instance wherein a same-or-related prior or subsequent visit has occurred, the entries for both the referent visit and the same-or-related visits(s) will be duplicated for return to the HCSD. It is likely that these duplication-related requirements will have to be performed after duty hours or on some portion of the weekend occurring during the middle of the on-site evaluation. It may be possible for the Project APFE team leader (OIC or NCOIC) to address part of this requirement during normal afternoon duty hours if after the first few days of data collection (a) the study operations are working smoothly, (b) access is granted to the Medical Records room to collect the records to be copied, and (c) a duplicating machine is made available for use. (As regards the latter two considerations, the possibility of gaining such access during normal duty hours may be explored by the Project APFE team leader, but it is not to be insisted upon.)

(2) Additional Limiting Criteria for GOCs. Whereas all identified retrospective record entries for patients treated in an AMIC (per the criteria immediately above) are to be duplicated, some of the records of identified patients treated in a GOC are not to be duplicated (due to the need of the study to include only categories of GOC patients which would have been eligible for treatment had the clinic been an AMIC rather than a GOC). Hence, among "identified" retrospective GOC patients, only the record entries of those who

are 13 years of age or older who suffer a medical complaint which is listed in Inclosure (or a "related illness," using the same very broad interpretation and guideline cited previously) are to be duplicated.

(3) Obliteration of Patient Name and SSN. After the duplication has been made of the appropriate clinical record entries, the name and SSN of the patient will be obliterated from the duplicate copy through the use of a black, broad tip, felt marker before the copy is inserted into the file of duplicates to be returned to the HCSD. (Note: In the event of multiple duplications for a given patient, as in instances wherein there exist prior or subsequent visits for treatment of the same-or-related illness, all copies pertaining to a single patient will be stapled together.)

3. Copy Requirements for Patients Treated During On-Site Evaluations. The SF 600s and Data Collection Sheets completed for all patients treated during the two-week on-site evaluation will be copied. (As before, unless access to a duplicating machine, e.g., xerox copier, can be obtained during late afternoon duty hours to begin the task, all such copying will have to be performed after normal duty hours. Such may require that the records of these patients be retained at the clinic overnight and returned as a group to the Medical Records room the following morning. As with the duplicate copies from the retrospective population, the name and SSN will be obliterated from the duplicate copy by marking over same with a black, felt tip marker.

VII LOGISTICAL INSTRUCTIONS FOR PROJECT OFFICERS

1. Transportation:

a. All project officers, except A.

- (1) Compact rental vehicles are authorized from airport to site.
- (2) Be sure GSA contract agency is used for rental vehicles.

b. Project Officer A.

- (1) Station wagon rental vehicles is authorized from _____ to _____ and _____ to _____.

- (2) Bessure GSA contract agency is used for rental vehicles,

2. Equipment:

a. Site #1 trip:

- (1) Six boxes of material and equipment are being shipped by GBL from _____ to _____ by American Air Lines Air Freight, These are to be picked up at the American Air Freight Office of the _____ airport upon project officer's arrival.

- (2) Six boxes of material and equipment will be shipped from _____ to _____ with the following procedure used:

(a) Prior to shipment, White DD Form 1387 (Pri 3) Military Shipment Labels will be affixed to each box applying label directly over blue DD Form 1387 (Pri 2) labels.

(b) These six boses will then be taken to the American Air Freight office at _____ for shipment back to _____. The freight personnel will be instructed to ship "Collect-Convert to GBL at Destination." Project officer will bring copy of airbill back to

_____ with him. It is very important that the freight personnel be told to ship "Collect-Convert to GBL at Destination."

b. Site #2 trip:

(1) Six boses of material and equipment are being shipped by GBL from _____ to Supply and Services Officer at the MEDDAC site. Project officer will pick up boxes from the Supply and Services Officer upon arrival at site.

(2) Within 3 days of arrival of site, Project Officer will need to contact Transportation Officer of site to start paperwork procedures for shipping material to _____ at completion of project at _____. Project officer will give DD Forms 1348-1, DOD Single Line Item Release/Receipt Document to transportation officer for his preparation of shipping documents (GBL and Air Freight bills). Fund cite for GBL are shown on DD Form 1348-1. Project officer will pick up documents from Transportation Officer when documents are completed so project officer can make shipment of material at the airport.

(3) Upon completion of project, project officer will deliver boxes to airport air freight office for shipment to _____, utilizing documents received from Transportation Officer. Prior to shipment, the first and last copies of DD Form 1348-1 will be inserted into Box #1, and white DD Form 1387 (Pri 3) Military Shipment Labels will be affixed to each box by applying labels directly over blue DD Form 1387 (Pri 2) labels.

(4) All copies of documents not used in shipping will be turned in to _____ by the project officer upon return to San Antonio.

c. Site #3 trip:

(1) Paragraphs 2b(1) and (4) apply to this trip.

(2) Within 3 days of arrival at site, project officer will need to contact Transportation Officer at site to start procedures for shipping material to _____ at completion of project at _____. Remainder of paragraph 2b(2) applies.

(3) Paragraph 2b(3) applies, except substitute _____ for _____.

d. Sites #4 and #5 trips:

(1) Paragraph 2b(1) and (4) apply to these trips.

(2) Upon completion of project, project officer will deliver boxes to airport air freight office for shipment to _____. Prior to shipment, the first and last copies of DD Form 1348-1 will be inserted in box #1, and white DD Form 1387 (Pri 3) Military Shipment Labels will be affixed to each box by applying new labels directly over previous labels,

(3) At time of shipment to _____, the air freight personnel will be instructed to ship "Collect-Convert to GBL at Destination." Project officer will bring copy of airbill back to San Antonio with him. It is very important that the freight personnel be told to ship "Collect-Convert to GBL at Destination."

e. Site #6 trip:

(1) Six boxes of material and equipment are being shipped by GBL from _____ to _____ by Continental Airlines Air Freight. These are to be picked up at the Continental Air Freight office at _____ upon arrival of project officer.

(2) Paragraph 2b(4) applies.

(3) Upon completion of project, the time clocks will be taken to the _____ and turned in. The remaining two boxes of material will be taken to Continental Airlines Air Freight office at the airport and sent back to San Antonio. Paragraph 2d(3) and 2d(2)(a) now applies.

3. Transportation for Making Shipments: Since project officers will only have compact size rental vehicles, as specified in paragraph 1a(1), project officers will need to coordinate with site project officers to obtain a pick-up or van type vehicle from site for this purpose.

LIST OF INCLOSURES

1. Time Card Data Entry Codes
2. AMOSIST Time Clock Entries
3. Consultation Time Card Entries
4. AMOSIST Physician/GOC Physician Time Clock Entries
5. Data Collection Instruments For Staff Satisfaction Questionnaire
6. Position Coding Sheets
7. Time Clock Adjustment Instructions
8. Clinic Floorplan/Time Clock Placements
9. Time Clock Repair Manual
10. HSC Support Requirements Letter
11. Patient Record Jacket Marking
12. LX, FX Signs
13. Algorithm Categories of Illness

- 2 - Ft Benning
- 3 - Ft Bragg
- 4 - Ft Ben Harrison
- 5 - Ft Huachuca
- 6 - Ft Monmouth

- 1 - Monday
- 2 - Tuesday
- 3 - Wednesday
- 4 - Thursday
- 5 - Friday

- 1 - Evaluation/treatment completed Within clinic.
(If further evaluation/treatment required, patient referred to:)
- 2 - Orthopedics
- 3 - Physical Therapy
- 4 - OB/GYN
- 5 - ENT
- 6 - Ophthalmology
- 7 - Urology
- 8 - Dermatology
- 9 - Internal Med, Gen Med, ER Phys.
- 0 - Other

CP INITIALS:

Care Providers
Initials

CP CATEG: (Care Provider's Category)

- 1 - Physician
- 2 - Physician Assistant
- 3 - Nurse Clinician
- 4 - AMOSIST
- 5 - Other

LAB REQD:

Laboratory Tests
Required

- 1 - None
- 2 - Blood
- 3 - Urine
- 4 - Bacteriological (to include throat culture)
- 5 - Some combination of 2, 3, 4, above.

SITE	DAY OF WEEK	PT DISP
CP INITIALS	CP CATEG.	
LAB REQD	X-RAY REQD	
CONSULTATION REQD		
ALGORITHM (CATEG. ILLNESS)		

X-RAY REQD:

- 1 - No
- 2 - Yes

CONSULTATION REQD:

- 1 - No
- 2 - Yes (On a time card completed by a Physician, a Yes entry would be used only if a requested consult interrupted the ongoing treatment of his own patient.)

ALGORITHM (CATEG ILLNESS):

- 1 - Eye
- 2 - Respiratory
- 3 - Gastrointestinal
- 4 - Genitourinary
- 5 - Musculo-Skeletal Spine
- 6 - Musculo-Skeletal Extremity
- 7 - Skin - Regional
- 8 - Skin - General
- 0 - Other

AMOSIST TIME CLOCK ENTRIES

ACTIVITY	TIME CLOCK UTILIZED (CODE)	WHEN ENTRY MADE	INSTRUCTION TO PATIENT
Initial Contact (1 entry, all patients)	AMOSISTS (A-)	At the time the evaluation is begun	None
Consultation (4 entries)	a. AMOSISTS (A-)	At the time you leave the exam room. (Note: Be sure to take the patient's time card with you.)	None
	b. MD's Consultation Clock (CO)	At the time the consultation actually begins with the MD	None
	c. MD's Consultation Clock (CO)	At the time the consultation ends (even if you have to return to the CO time clock to enter it).	None
	d. AMOSISTS (A-)	At time you resume the examination/treatment of the patient.	None
Lab Test/X-Ray (2 entries)	a. AMOSISTS (A-)	At the time the patient leaves the exam room to obtain the Lab test/x-ray.	Direct the patient to go to station LX on his way out of the clinic.
	b. AMOSISTS (A-)	When the patient returns to your exam room and the evaluation/treatment is resumed.	None
Referral (Either to AMOSIST MD or to another clinic, 1 entry)	AMOSISTS (A-)	When patient leaves the exam room,	If referred for further care outside (e.g., to OH/CYN), then direct patient to go to station LX on his way out of the clinic.
	AMOSIST (A-)	When patient leaves the exam room,	If referred to AMOSIST MD for further care, no special study-related instruction is required. Direct patient to go to station LX on his way out of the clinic.

PHYSICIAN EXTENDER TIME CLOCK ENTRIES
(General Outpatient Clinic)

ACTIVITY No. of Entries Required)	WHEN TO MAKE ENTRY	CARD ANNOTATIONS OR INSTRUCTIONS TO PATIENT
<u>Initiation of Eval/treatment</u> (1 entry for each patient)	At the time the evaluation/examination of the patient begins.	None
<u>Lab Test or X-Ray Required</u>	<p>a. Immediately prior to the time the patient leaves the exam room. (Patient retains the time card when he leaves.)</p> <p>b. At the time the evaluation/examination of the patient is re-initiated upon his return to the exam room.</p>	<p>Direct the patient to go to station LX before leaving the clinic to obtain his lab test or x-ray.</p> <p>None</p>
<u>Consultation with MD is Required</u> ($\frac{1}{4}$ entries)	<p>a. At the time you exit your own exam room. Make an entry from your assigned time clock. (Note: Take the patient's time card with you when you leave.)</p> <p>b. At the time you begin your consultation with the MD, enter a time mark from the MD's timeclock on your patient's time card.</p> <p>c. At the end of the consultation, enter a second time mark from the MD's time clock (even if you have to go back to his exam room to do it).</p> <p>d. At the time you re-enter your exam room and resume your evaluation/treatment of your patient make an entry from your assigned time clock.</p>	<p>Enter the letters CO to the right of the time clock entry.</p> <p>None</p> <p>None</p> <p>Enter the initials of the individual who provided your consultation.</p>
<u>Evaluation/Treatment Completed</u> (1 entry, all patients)	When the evaluation/treatment of the patient is completed for that day, make a time clock entry on his time card just prior to the time he exits your exam room (return time card to patient before he leaves).	Direct the patient to station LX prior to leaving the clinic.

2nd 2 (GOC)

CONSULTATION TIME CARD ENTRIES

ACTIVITY	TIME CLOCK UTILIZED (CODE)	WHEN ENTRY MADE	ANNOTATIONS
Consultation Completed Within Office (2 entries)	a. MD Consultation Clock (CO)	At the time consultation begins.	Identify the AMOSIST requesting the consult by entering his initials to the right of the first entry.
	b. MD Consultation Clock (CO)	At the time the consultation is completed.	None.
Consultation Requires Examination of New/Store Patient (4 to 6 entries)	a. MD Consultation Clock (CO)	At the time the consultation is begun.	Identify the AMOSIST requesting the consult by entering his initials to the right of the first entry.
	b. MD Consultation Clock (CO)	At the time you leave your exam room.	None
	c. AMOSIST's (A-)	At the time you arrive at the AMOSIST's exam room to begin the examination of his (the AMOSIST's) patient.	None
	d. AMOSIST's (A-)	At the time you leave the AMOSIST's office/exam room.	None
	e. MD Consultation Clock (CO)-Conditional, only if further consult occurs in your office.	At the time consultation resumes in your office/exam room.	None
	f. MD Consultation Clock (CO)-Conditional, as in "e", above.	At the time consultation is completed.	None

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ANALYST MD TREATMENT TIME CLOCK ENTRIES

ACTIVITY	TIME CLOCK UTILIZED (CODE)	WHEN ENTRY MADE	INSTRUCTION/ANNOTATION
Initial Contact (1 entry, all patients)	MD Treatment Clock (DA)	At the time the evaluation/treatment is begun.	None
Lab/X-Rays Required (2 entries)	a. MD Treatment Clock (DA)	At the time the patient leaves the exam room to obtain the needed lab test(s)/x-ray.	Direct patient to go to the LX station prior to leaving the clinic to obtain his lab test/x-ray.
	b. MD Treatment Clock (DA)	At the time the patient returns to the exam room and the evaluation/treatment is resumed.	None
Intrusive Consultation Required (2 sets of Double entries on the patients time card--2 single entries on the Consultation card)	a. MD Treatment Clock (DA) (DA)	At the time the ongoing evaluation/treatment of your (the MD's) patient is interrupted. <u>DOUBLE ENTRY</u>	None
	b. MD Consultation Clock (CO)	At the time consultation begins (i.e., soon, if not immediately after the previous double entry on the patients card)	None
	NOTE: No additional entries (IN-OUT) from the ANALYST's time clock may be required to be placed on the CONSULTATION time card if you have to actually examine the ANALYST's patient in order to complete the consultation, i.e., (time clock entries at the time you enter and leave the ANALYST's exam room.)		
	c. MD Consultation (CO) Clock (on Consult Card)	At the time the consultation is completed.	(Annotate the CONSULTATION time card with the initials of the ANALYST for which the Consult is provided.)
	d. MD Treatment Clock (double entry) (DA)(DA)	At the time evaluation treatment of your own patient is resumed. <u>DOUBLE ENTRY</u>	None
Referral (to another clinic or MD, 1 entry)	MD Treatment Clock (DA)	At the time the patient leaves the exam room.	Direct the patient to go to station LX on his way out of the clinic.
Evaluation/ Treatment Completed (1 entry)	MD Treatment Clock (DA)	At the time the patient leaves the exam room	Direct the patient to go to station LX on his way out of the clinic.

PHYSICIAN TIME CLOCK ENTRIES

(General Outpatient Clinic)

ACTIVITY (No. of Entries Required)	WHEN TO MAKE ENTRY	CARD ANNOTATIONS OR INSTRUCTIONS TO PATIENT
<u>Initiation of Eval/Treatment</u> (1 entry for each patient)	At the time the evaluation/examination of the patient begins.	None
<u>Lab Test or X-Ray Required</u> (2 entries)	a. Immediately prior to the time the patient leaves the exam room. (Patient retains the time card when he leaves.) b. At the time the evaluation/examination of the patient is re-initiated upon his return to the exam room.	Direct the patient to go to station LX before leaving the clinic to obtain his lab test or x-ray. None
<u>Intrusive Consultation Requirement</u> (4 entries consisting of two sets of double entries.)	a. At the time the ongoing treatment/evaluation is interrupted to render the requested consultation enter a double punch on your patient's time card. (i.e., insert your patient card twice in rapid succession). b. After the consultation, at the time the evaluation/treatment of your own patient is resumed, enter a second double punch (i.e., two successive entries in rapid succession) on your patient's time card.	Enter to the right of the first of these two entries the initials of the individual seeking the consult. None
<u>Evaluation/Treatment Completed</u> (1 entry, all patients)	When the evaluation/treatment of the patient is completed for that day, make a time clock entry on his time card just prior to the time he exits your exam room (return time card to patient before he leaves).	Direct the patient to station LX prior to leaving the clinic.

DATA COLLECTION INSTRUCTIONS FOR
STAFF SATISFACTION QUESTIONNAIRES

1. Three versions of a Staff Satisfaction Questionnaire (one for AMOSISTS, one for AMOSIST MDs, and one for non-AMIC personnel) are inclosed. Attached as the cover sheet on each of the questionnaire is a page which identifies, by position, the category of persons who are to complete the questionnaires which form the remainder of the inclosure. (This cover page and Part V should be consistent by position, by category; e.g., AMOSIST MD--Part V AMOSIST MD),

2. The following personnel are to complete only the specific Staff Satisfaction Questionnaire designated for his/her category below:

a. All those working as AMOSISTS in the AMIC. (Twelve copies are provided. Please return unused copies).

b. The Chief of the local AMOSIST Program and all additional MC officers who are assigned to work in the AMIC in the role of an AMOSIST MD as their primary duty.

c. Non-AMIC personnel. Fifteen additional individuals are to be randomly selected from the general MOS and rank requirements outlined below to complete the questionnaire. These persons are to be selected from the remaining, non-AMIC personnel who staff other outpatient clinics of the MTF. The requirement for random selection is crucial. No selection is to be based upon personal knowledge of the respondent. It is suggested that selection be made from a roster(s) on the basis of the last digit of SSNs. The personnel required are:

<u>MOS</u>	<u>GRADE</u>	<u>QUANTITY</u>
91B	E3, E4 *	3
	E5 or above	3
91C	E4 *	3
	E5 or above	3
MC	Any**	3

3. During the period of 9-19 May 1977, the above described personnel (paragraph 2) are to complete and return the Staff Satisfaction Questionnaires. As indicated in the instructions on the questionnaires, they are to be completed anonymously. Blank envelopes are attached to each questionnaire. After the completion of the questionnaire, each individual is

to seal his questionnaire in the envelope and return it to the locally designated project action officer for his retention and subsequent return to the study agency along with the other survey materials which have been collected. The local project officer is to enter his name and location in the space provided at the bottom of the cover sheet in order that the respondent knows to whom and where the questionnaire is to be returned.

1 Incl
Packet of
30 Questionnaires

- * If impossible to meet this desired distribution, distribute as required in order to obtain a total of twelve 91B/91C respondents.
- ** It is desired that these questionnaires be completed by MCs with 3 or less years active service in an MTF. If impossible to accomplish this requirement, request questionnaires be completed by MCs with as near 3 years active service in an MTF as possible.

GENERAL OUTPATIENT CLINIC
DATA COLLECTION INSTRUCTIONS FOR
STAFF SATISFACTION QUESTIONNAIRES

Fifteen copies of a STAFF SATISFACTION QUESTIONNAIRE (SSQ) are inclosed. One copy is to be completed by each primary care provider (i.e., MD or physician extender such as PA or Nurse Clinician) who serves regularly on at least a one-half time basis in the clinic.

NOTE: If there are extra copies of the SSQ—beyond those needed to meet the primary care provider requirements outlined above—provide copies to each of the nursing personnel who work in the clinic, to the 91Bs and 91Cs who are assigned to that clinic, and, as copies are available, to physicians who are present who serve there periodically on a "rotational" short-term basis.

AMIC POSITION CODING

Date: _____

LOCK CODES	NAME, RANK, MOS OF INDIVIDUALS	
	morning	afternoon
Receptionist (RE)	_____	_____
ital Signs (VS)	_____	_____
MOSISTs A (AA)	_____	_____
MOSISTs B (AB)	_____	_____
MOSISTs C (AC)	_____	_____
MOSISTs D (AD)	_____	_____
octor A (DA)	_____	_____
octor B (DB)	_____	_____

Changes occurring other than at noon:

<u>CODE</u>	<u>NATURE OF CHANGE (Individuals, Times)</u>
_____	_____
_____	_____
_____	_____

Additional Observations and Comments:

No. patients for refills _____

No. patients for treatment _____

Total no. patients _____

Ind 6

TIME CLOCK ADJUSTMENT PROCEDURES

CONSECUTIVE SPACING TIME RECORDER

TYPE 8400

Installation

Carefully remove the recorder from the packing case.

Remove the recorder case by unlocking and moving the recorder case from the base in the same direction the case-key is removed from the lock.

The Consecutive Spacing Time Recorder should be installed at a location that best serves its users' convenience, and where a power outlet is made available. (See Customer Instruction for installing Recorder, Type 8400.)

The recorder should be placed where it is not subject to damage by abuse, dust, dirt, moisture, vibration, or extreme temperature changes. It is a time piece and should be treated accordingly.

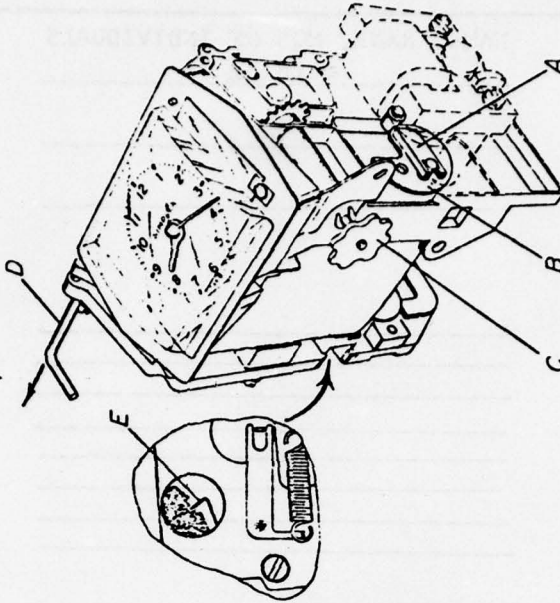
The recorder may be mounted in four ways: 1. Vertical, free standing (four cushion feet are provided so it can stand on a desk or suitable table). 2. Vertical, wall mounted (by use of a universal mounting bracket, optional). Fasten the bracket to the wall with the wood screws furnished. Remove the cushion feet from the base and mount the recorder on the bracket with machine screws. 3. Horizontal suspension (by use of the universal mounting bracket, optional) the recorder can be mounted on the under side of a shelf, table, etc. Fasten the mounting bracket in place with wood screws. Remove cushion feet from the base and mount the recorder on the bracket with the screws supplied. 4. Horizontal, free standing (by use of the universal mounting bracket, optional) the recorder can lie flat on a shelf, table, etc. Remove cushion feet from the base and fasten them to mounting stand. Mount the recorder on the stand using the screws supplied with the stand. Insert snap-in rubber bumpers on mounting stand. Note: When mounted horizontally the card receiver must be below the dial to insure the chip box being on the under side of the recorder. For horizontal mounting the clock dial must be removed and revolved 180 degrees and the hands reset so time can be properly read.

Synchronous drive recorders should be plugged into a power outlet supplying current as specified for the recorder. Most satisfactory operation is experienced on an individually fused clock circuit with a switch controlling the circuit that cannot be easily turned off in error. However, the clock will operate correctly whether or not an individual clock circuit is furnished, so long as current supply is continuous.

Self-regulated impulse drive recorder corrects for fast or slow time at the end of every hour. The polarity of the wire and color code for this operation must be maintained throughout the system and into the recorder. The power cord should be plugged into a circuit supplying current as specified for the recorder.

Time Adjustment

When the correct time must be set on the Type 8400, unlock and remove the case. Do not attempt to set this clock by means of the clock hands. Allow the clock to run until the arm A and the cam B are in the position shown in Figure 1. Remove the line cord from the receptacle. Set the hands to one minute ahead of the correct time by turning in a forward direction using setting knob C. This one minute advance setting on the dial allows 45 seconds to insert the cord. Do not attempt to set the clock backward. Insert the line cord. Replace and lock the cover. Take a registration to assure AM or PM is correct. If necessary repeat the above, setting the clock ahead twelve hours.



DATE or DAY typewheel may be advanced by moving the ribbon aside and advancing the typewheel away from the dial until the correct day or date is in the registering position. The DATE typewheel must be corrected by hand when a month has other than 31 days.

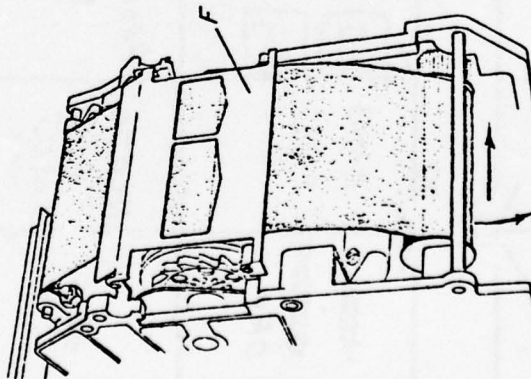
If the optional MONTH typewheel is included it is advanced by disengaging the detent spring and setting the typewheel to print the desired month. A hole in the right side of the frame is provided for

access to the detent spring E which is located at the rear of the MONTH wheel. The detent spring must lock the wheel to hold it in the correct position.

Ribbon Replacement

The Type 8400 recorder has automatic ribbon reverse. When the registrations are no longer dark enough the ribbon must be changed.

Unlock and remove the case. Allow the clock to run until the arm and cam are in the position shown in Figure 1. Disconnect the plug to the type assembly. Remove pin D as shown in Figure 1. Remove the type assembly straight to the front and place on a solid surface



with the dial up. Remove the ribbon shield F, bottom first. Remove the ribbon spools by pressing toward the ribbon drive ratchet, swinging the opposite end out. Insert the full spool with the keyed end toward the drive ratchet. Clip the end to an empty spool so the keyed end will be engaged by the drive ratchet. Slide the ribbon under the dial and insert the spool. Replace the ribbon shield with the beveled portion up, attaching the top clip first. Replace the type assembly and locking pin. Set time as explained under Time Adjustment. Insert type assembly plug. Replace and lock the case.

Registration

Insert and press down time record card in card receiver, (with printing side toward clock dial), until automatic pressure printing mechanism places a record on record card.

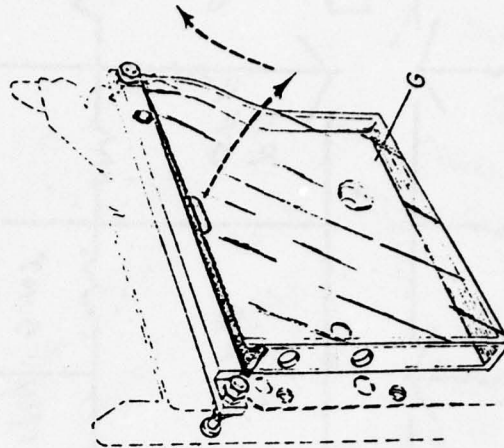
The recorder automatically spaces each registration in succeeding order below the previous record, to within 5/8" of the bottom of card.

Best results are obtained by using card stock of high quality especially designed and very accurately cut and lined for card records.

Order standard card designs through the local Simplex Office. When specially designed cards are required, contact the local Simplex Time Equipment Salesman.

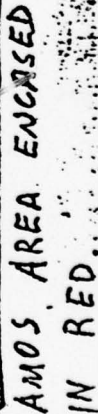
Removing Chips

REMOVE CHIPS ONCE A MONTH.



The chip box G is a flat plastic receptacle located on the back of the recorder below the printing platen. A metal cover holds the box in place and snaps into a catch just under the platen. Snap the box free at top near the platen and lift up. Box cover is removable to aid emptying chips. Receptacle has overload relief opening to prevent excessive accumulation of chips from interfering with operation of recorder.

Incl 8





SERVICE INSTRUCTIONS*
ATTENDANCE RECORDERS

CONSECUTIVE SPACING CARD RECORDER
TYPE 8400

No attempt has been made to rewrite or correct this manual at this time. Delete this item from the page two of the contents for the smaller size publications. Listing can be identified by "38 pages."

SIMPLEX TIME RECORDER CO.

* Remainder of manual has been removed

Printed in USA
575-357

HSPA-A

11 APR 1977

SUBJECT: Support Requirements for Phase II, Project APFE (AMOSIST Program Field Evaluation)

Commander
US Army MEDDAC
Fort Benning, GA 31905

1. Reference: Letter, HSPA-A, DA, HQ US Army Health Services Command, 21 March 1977, subject: Phase II Instructions For Project APFE (AMOSIST Program Field Evaluation).
2. The referenced letter indicates that your facility will be visited by two members of a study team during the period 15-28 May 1977 to collect data for use in Project APFE (AMOSIST Program Field Evaluation). The senior individual who is to visit your facility is the following:

Howell, James, MAJ, MSC, 443-42-3925

The above named individual will be accompanied by an enlisted assistant in the grade of E4. Request that appropriate billeting arrangements be made.

3. In order for these personnel to accomplish their assigned objective and collect the data required in an efficient, timely manner, it is necessary that the following support be provided for the duration of their visit:

- a. Two E-4s/GS-3s or above to assist in the distribution and collection of questionnaires and the performance of other data collection procedures as requested by the senior member of the study team. Although it is desirable that these personnel be the same individuals throughout the period of the visit, it is recognized that such may be impractical in some instances. Should this be the case at your facility, it is requested that no more than four separate individuals be utilized and that each be involved for at least five consecutive workdays. (Personnel in the "medical hold" status—or other suitable personnel in transient status—are acceptable as long as the grade requirement cited above is met.)

Incl 10

RECEIVED
11 APR 1977
901-03 AMOSIST
LHQ

HSPA-A

11 APR 67

SUBJECT: Support Requirements for Phase II, Project APFE (AMOSIST
Program Field Evaluation

b. Access to the Acute Minor Illness Clinic (AMIC) on Sunday, the initial day of arrival of the Project APFE team, for the purpose of setting up the automated time clock apparatus which is to be used in the study.

c. Opportunity to brief personnel for one hour regarding the study. (It is necessary that this occur at the beginning of the two-week study period, prior to the initiation of the data collection effort on the first day of the study. Subsequent telephone coordination between MAJ Schopper and personnel of your facility will be required to establish the most appropriate time.)

d. Access to patient records for the purpose of obtaining data to be utilized in conducting a retrospective audit.

e. Access to a reproduction machine (e.g., xerox copier or equivalent) during both regular and after-duty hours.

f. Provisions for the overnight retention of records of patients treated during regular duty hours in the AMIC of your facility.

4. Requirements 3d, e, and f above relate to the approved study requirement for on-site study personnel to obtain xerox copies (from which the patient's name and social security number have been obliterated) of portions of patient records previously marked for the purpose of retrospective audit and of portions of records of patients treated in the AMIC while the team is on-site.

5. If there are questions regarding the above, they may be directed to the Project Officer, MAJ Schopper, AV 471-3331/4541.

FOR THE COMMANDER:

Signed

THEODORA H. NAGEL
LTC, AGC
Adjutant General

RELEASED BY

Q Q h
A A HOWARD, MD, COL, MC
DCGSA

MARKING INSTRUCTIONS

1. The required marking is shown in the upper, left-hand corner.
2. It is to be at least as "thick" as the marking shown.
3. It is to extend into the record at least one (but no more than one and one-half) inches from the left-hand edge of the record.
4. It is to appear approximately $1/4$ inch (but no more than $1/2$ inch) down from the top of the record.
5. It is to be black in color.

*Shows the marking on the inside of the
under record jacket*

Incl 11

LX

FX

1. EYE

- a. Blepharitis
- b. Stye
- c. Chalazion
- d. Conjunctivitis, bacterial
- e. Conjunctivitis, allergic
- f. Conjunctivitis, non-specific
- g. Subconjunctival hemorrhage

2. RESPIRATORY

- a. Acute otitis media
- b. Acute serous otitis media
- c. Toxic labyrinthitis
- d. Furuncle
- e. Acute otitis externa
- f. Chronic otitis externa
- g. Acute sinusitis
- h. Allergic rhinitis
- i. Acute pharyngitis, possibly streptococcal
- j. Streptococcal sore throat
- k. Costochondritis, non-specific
- l. Rhinitis, non-specific
- m. Acute pharyngitis, non-specific
- n. Headache, non-specific
- o. Acute laryngitis, non-specific
- p. Acute bronchitis, non-specific

3. GASTROINTESTINAL

- a. Gastroenteritis, non-specific
- b. Irritable colon

4. GENITOURINARY

- a. Genitourinary gonorrhea (gonococcal urethritis)
- b. Urethritis, non-specific
- c. Vaginitis, trichomonas
- d. Vaginitis, candida albicans
- e. Vaginitis, non-specific
- f. Cystitis

5. MUSCULO-SKELETAL SPINE

- a. Low back pain, non-specific

6. MUSCULO-SKELETAL EXTREMITY

- a. Supraspinatus tendinitis
- b. Bicipital tenosynovitis
- c. Lateral epicondylitis
- d. Ankle sprain

7. SKIN - REGIONAL

- a. Seborrheic dermatitis
- b. Pediculosis capitis
- c. Herpes simplex labialis
- d. Aphthous stomatitis
- e. Acne
- f. Pseudofolliculitis
- g. Tinea cruris
- h. Pediculosis pubis
- i. Tinea pedis

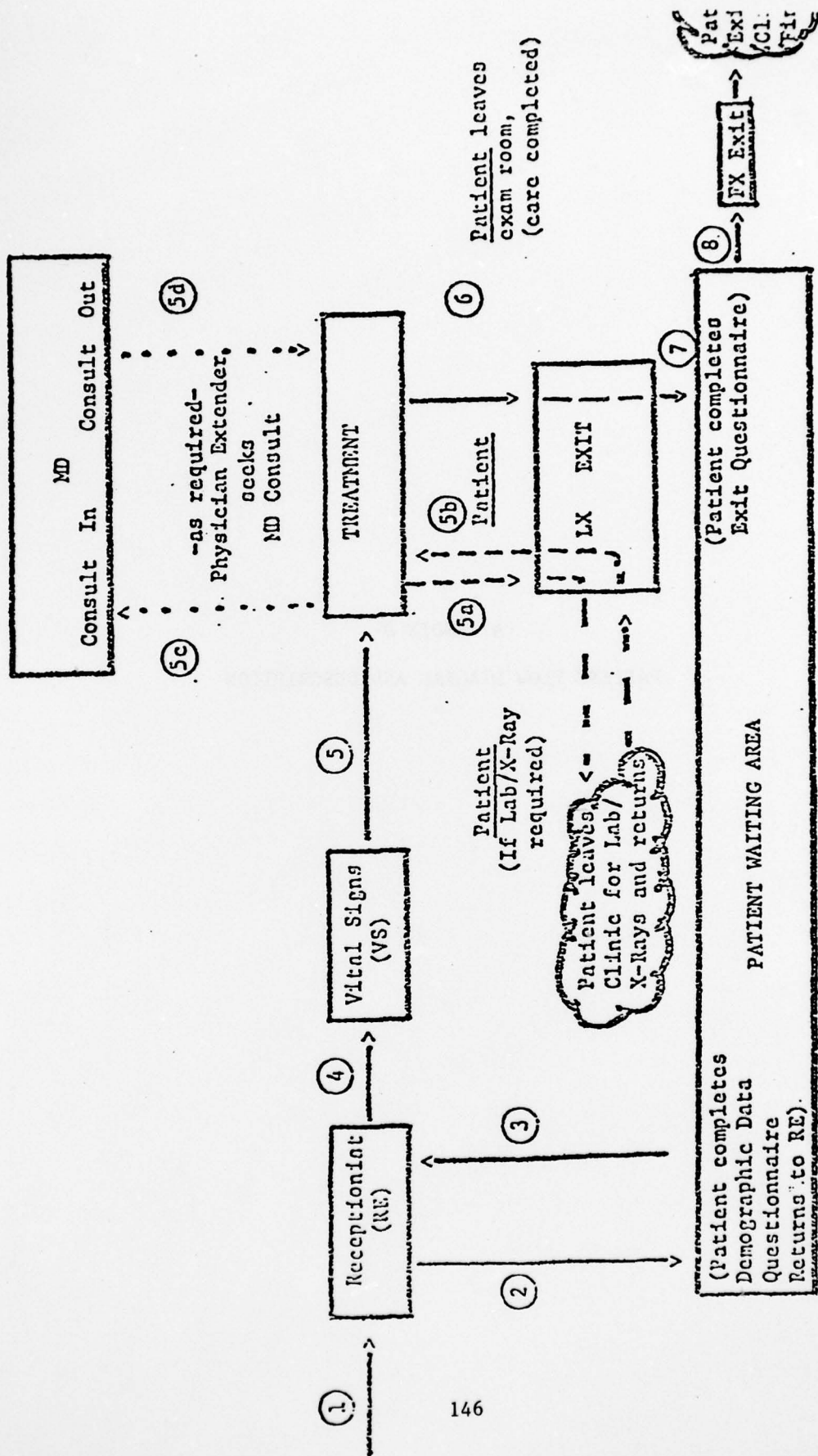
8. SKIN - General

- a. Pityriasis rosea
- b. Tinea versicolor
- c. Tinea corporis
- d. Atopic dermatitis
- e. Contact dermatitis, plant
- f. Insect Bite/Sting
- g. Sunburn

APPENDIX D

PATIENT FLOW DIAGRAM AND DESCRIPTION

PATIENT FLOWCHART

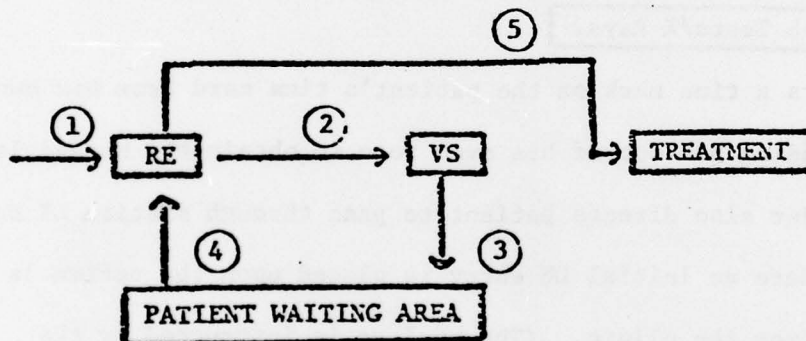


EXPLANATION OF PATIENT FLOWCHART

1. Patient enters clinic and is logged in at receptionist desk. Patient receives entry questionnaire and time card. Two each "RE" entries are made on the patient's time card to document the beginning and end of the receptionist activity.

NOTE 1: Steps ②, ③, and ④ of Patient Flowchart apply to a clinic in which the patient is called to a Vital Signs station and then returns to the patient waiting area to await treatment. If no VS area is present, then step ④ does not apply.

NOTE 2: It may be that in some clinics, patients are called immediately to the VS station after being logged in by the receptionist. If that is the case, the patient would carry the questionnaire and clipboard with him through the VS area and complete the questionnaire after the Vital Signs have been taken. The flow diagram would be modified as follows:



2. Patient goes to patient waiting area to complete the initial Patient Satisfaction Questionnaire (PSQ). This questionnaire asks largely demographic data.

3. After completing the PSQ, the patient returns the questionnaire and clipboard to the receptionist station. The patient then returns to the patient waiting area to await being called to the Vital Signs area (or the treatment room if Note 1 or 2 above apply).
4. Patient goes to Vital Signs area (and then returns to waiting area if a further wait is encountered prior to treatment). Two each VS entries (In and Out) are made on the patient's time card.
5. Patient enters the treatment room. The care provider makes the initial entry (e.g., AB) on the patient's time card just prior to beginning the evaluation/treatment. Prior to the completion of treatment, additional entries may be required on the patient's time card if either laboratory tests or x-rays are required (paths 5a. and 5b) through station LX) or if the care provider is a physician extender, (i.e., not an MD) and there is a need to consult with an MD in order to effect proper completion of treatment (paths 5c) and 5d).

Conditional Entries: Lab Tests/X-Rays.

- 5a. The care provider enters a time mark on the patient's time card from his own time clock just prior to sending him out of his exam room to obtain the needed lab test/x-ray. The care provider also directs patient to pass through station LX on his way out of the clinic where an initial LX entry is placed upon the patient's time card to document his exit from the clinic. (The patient is instructed by the LX station operator to return through the LX station when he returns to the clinic.)
- 5b. Patient returns to clinic through the LX station (where a second LX entry is made on his time card to document his return to the clinic). After

the LA entry is made, the patient is directed (per clinic policy) to the patient waiting area, the receptionist, or directly to the care provider to obtain (or await) further evaluation/treatment. At the time the patient returns to the care provider's exam room and the care provider re-initiates evaluation/treatment of the patient, the care provider will make an entry to the patient's time card from his own time clock.

Conditional Entries (FOR PHYSICIAN EXTENDERS ONLY): Consult with MD

5c. At the time a care provider leaves his exam room to seek consultation he will take the patient's time card and make an entry upon same from his own time clock. He will keep the patient's time card with him and when he arrives at the MD's office and actually begins the consultation he will enter a time mark from the MD's time clock.

5d. At the time the consultation is finished, the physician extender will enter a second entry from the MD's time clock and return to his own exam room. At the time he re-enters his exam room and resumes his own evaluation/work-up/treatment of the patient, he will make an entry on the patient's time card from his own time clock.

NOTE: It may be that multiple consultations might be required of a single patient. The same four time entries would be required for each:

- (a) Physician extender exits, (b) Consultation starts, (c) Consultation finished, (d) Physician extender return and resumes treatment.

6. When the evaluation/treatment of the patient is complete (insofar as the care provider is concerned for that day), the care provider will make a final entry on the patient's time card from his own time clock and direct the patient

to the LX station. (This would be the second time to that station for those patients who had previously required lab tests or x-rays.)

7. At the LX station, the patient will receive a time card entry, a "post-treatment" questionnaire, Patient Satisfaction Questionnaire IV (PSQ IV) on a clipboard, and instructions to take everything (PSQ IV, clipboard, and time card) to station FX prior to exiting the clinic.

8. After completing PSQ IV, the patient returns it and the clipboard to the FX station operator and surrenders his time card. FX operator inserts the patient time card into his clock for the final entry on that card.

Appendix E

SYSTEM-WIDE AND CARE PROVIDER COMPARISONS OF PHYSICIAN CARE/CONSULTATION TIME REQUIREMENTS PER PATIENT ACCORDING TO CATEGORY OF ILLNESS

CATEGORY OF ILLNESS	CLINIC/ CARE PROVIDER	COMPARISONS ^a					
		SYSTEM-WIDE			CARE PROVIDER		
		Time (Min.)	No. PTS	Sig. (p =)	Time (Min.)	No. PTS	Sig. (p =)
Eye (1)	GOC/Physician	3.46	32	.2500	6.15	18	.0006
	AMIC/AMOSIST	2.37	45		2.46	56	
Respi- ratory (2)	GOC/Physician	6.76	113	.0000	8.73	87	.0000
	AMIC/AMOSIST	1.74	423		1.81	524	
Gastroin- testinal (3)	GOC/Physician	8.23	69	.0000	8.74	65	.0000
	AMIC/AMOSIST	3.52	96		3.28	113	
Genitour- inary (4)	GOC/Physician	6.13	31	.0000	7.95	22	.0000
	AMIC/AMOSIST	2.37	128		2.16	129	
Musculo- Skeletal Spine (5)	GOC/Physician	7.37	48	.5695	8.63	41	.0290
	AMIC/AMOSIST	5.79	14		3.39	20	
Musculo- Skeletal Extremity (6)	GOC/Physician	7.88	83	.0016	9.21	67	.0000
	AMIC/AMOSIST	3.10	63		3.38	89	
Skin, Regional (7)	GOC/Physician	6.73	45	.0021	8.49	31	.0000
	AMIC/AMOSIST	2.49	75		1.37	82	
Skin, General (8)	GOC/Physician	4.14	37	.0024	6.13	25	.0000
	AMIC/AMOSIST	1.79	91		1.55	134	
Other (9)	GOC/Physician	6.10	602	.0000	8.44	427	.0000
	AMIC/AMOSIST	2.32	188		1.79	177	
1 - 8	GOC/Physician	6.75	459	.0000	8.43	356	.0000
	AMIC/AMOSIST	2.25	936		2.11	1148	
All	GOC/Physician	6.38	1061	.0000	8.44	783	.0000
	AMIC/AMOSIST	2.27	1124		2.07	1325	

a. All comparisons are one-way ANOVAs.

Appendix F

SYSTEM-WIDE AND CARE PROVIDER COMPARISONS OF DISPOSITION-ADJUSTED PHYSICIAN CARE/CONSULTATION TIME REQUIREMENTS PER PATIENT ACCORDING TO CATEGORY OF ILLNESS

CATEGORY OF ILLNESS	CLINIC/ CARE PROVIDER	COMPARISONS ^a					
		SYSTEM-WIDE			CARE PROVIDER		
		Time (Min.)	No. PTS	Sig. (p =)	Time (Min.)	No. PTS	Sig. (p =)
Eye (1)	GOC/Physician	6.62	32	.5581	9.43	18	.0102
	AMIC/AMOSIST	5.74	45		5.02	56	
Respi-ratory (2)	GOC/Physician	9.52	113	.0000	11.74	87	.0000
	AMIC/AMOSIST	4.15	423		3.95	524	
Gastroin-testinal (3)	GOC/Physician	11.92	69	.0000	12.51	65	.0000
	AMIC/AMOSIST	6.51	96		5.88	113	
Genitour-inary (4)	GOC/Physician	9.12	31	.0018	9.87	22	.0005
	AMIC/AMOSIST	5.27	128		4.97	129	
Musculo-Skeletal Spine (5)	GOC/Physician	12.47	48	.5559	13.98	41	.0088
	AMIC/AMOSIST	10.61	14		6.77	20	
Musculo-Skeletal Extremity (6)	GOC/Physician	11.13	83	.0241	12.23	67	.0004
	AMIC/AMOSIST	7.39	63		6.70	89	
Skin, Regional (7)	GOC/Physician	8.79	45	.0675	10.94	31	.0000
	AMIC/AMOSIST	5.76	75		4.45	82	
Skin, General (8)	GOC/Physician	6.88	37	.0333	9.17	25	.0000
	AMIC/AMOSIST	4.48	91		3.57	134	
Other (9)	GOC/Physician	9.82	602	.0000	12.28	427	.0000
	AMIC/AMOSIST	5.51	188		5.03	177	
1 - 8	GOC/Physician	9.95	459	.0000	11.75	356	.0000
	AMIC/AMOSIST	5.09	936		4.56	1148	
All	GOC/Physician	9.87	1061	.0000	12.04	783	.0000
	AMIC/AMOSIST	5.16	1124		4.62	13.25	

a. All comparisons are one-way ANOVAs.

Appendix G

COMPARISONS OF PRINCIPAL CARE PROVIDERS' TOTAL PATIENT CONTACT TIME
ACCORDING TO CATEGORY OF ILLNESS

CATEGORY OF ILLNESS	CLINIC/ CARE PROVIDER	COMPARISONS ^a					
		SYSTEM-WIDE			CARE PROVIDER		
		Time ^b (Min.)	No. PTS	Sig. (p =)	Time ^b (Min.)	No. PTS	Sig. (p =)
Eye (1)	GOC/Physician	7.57	32	.0805	6.15	18	.0146
	AMIC/AMOSIST	11.01	44		11.87	55	
Respi- ratory (2)	GOC/Physician	9.18	113	.0001	8.73	87	.0000
	AMIC/AMOSIST	12.66	412		13.50	510	
Gastroin- testinal (3)	GOC/Physician	9.00	69	.0000	8.74	65	.0000
	AMIC/AMOSIST	15.17	90		14.79	105	
Genitour- inary (4)	GOC/Physician	8.68	31	.0229	7.95	22	.0239
	AMIC/AMOSIST	12.25	124		12.10	125	
Musculo- Skeletal Spine (5)	GOC/Physician	9.47	48	.0583	8.63	41	.0365
	AMIC/AMOSIST	15.15	14		14.24	20	
Musculo- Skeletal Extremity (6)	GOC/Physician	10.26	83	.0536	9.21	67	.0004
	AMIC/AMOSIST	13.81	59		14.96	85	
Skin, Regional (7)	GOC/Physician	11.89	45	.8702	8.49	31	.0903
	AMIC/AMOSIST	12.24	71		11.68	78	
Skin, General (8)	GOC/Physician	6.16	37	.0000	6.13	25	.0000
	AMIC/AMOSIST	12.35	82		12.33	124	
Other (9)	GOC/Physician	10.16	601	.0363	8.44	427	.4229
	AMIC/AMOSIST	9.05	183		9.01	172	
1 - 8	GOC/Physician	9.29	459	.0000	8.43	356	.0000
	AMIC/AMOSIST	12.83	897		13.25	1103	
All	GOC/Physician	9.79	1060	.0000	8.44	783	.0000
	AMIC/AMOSIST	12.19	1080		12.68	1275	

a. All comparisons are one-way ANOVAs.

b. Time per patient.

Appendix H

COMPARISONS OF TOTAL ACCOUNTABLE CLINIC CARE PROVIDERS' TIME-PER-PATIENT
ACCORDING TO CATEGORY OF ILLNESS

CATEGORY OF ILLNESS	CLINIC/ CARE PROVIDER	COMPARISONS ^a					
		SYSTEM-WIDE			CARE PROVIDER		
		Time ^b (Min.)	No. PTS	Sig. (p =)	Time ^b (Min.)	No. PTS	Sig. (p =)
Eye (1)	GOC/Physician	7.57	32	.0000	6.15	18	.0000
	AMIC/AMOSIST	20.78	44		13.44	55	
Respi- ratory (2)	GOC/Physician	9.21	113	.0000	8.73	87	.0000
	AMIC/AMOSIST	17.10	412		17.66	510	
Gastroin- testinal (3)	GOC/Physician	9.02	69	.0000	8.74	65	.0000
	AMIC/AMOSIST	23.28	90		22.69	105	
Genitour- inary (4)	GOC/Physician	9.31	31	.0004	7.95	22	.0009
	AMIC/AMOSIST	19.10	124		18.85	125	
Musculo- Skeletal Spine (5)	GOC/Physician	9.47	48	.0000	8.63	41	.0002
	AMIC/AMOSIST	26.68	14		21.60	20	
Musculo- Skeletal Extremity (6)	GOC/Physician	10.72	83	.0000	9.21	67	.0000
	AMIC/AMOSIST	22.14	59		22.30	85	
Skin, Regional (7)	GOC/Physician	11.39	45	.0135	8.49	31	.0017
	AMIC/AMOSIST	17.55	71		16.64	78	
Skin, General (8)	GOC/Physician	6.16	37	.0000	6.13	25	.0000
	AMIC/AMOSIST	18.18	82		17.23	124	
Other (9)	GOC/Physician	10.32	601	.0003	8.44	427	.0000
	AMIC/AMOSIST	13.53	183		13.76	172	
1 - 8	GOC/Physician	9.38	459	.0000	8.43	356	.0000
	AMIC/AMOSIST	18.82	897		18.76	1103	
All	GOC/Physician	9.91	1059	.0000	8.44	783	.0000
	AMIC/AMOSIST	17.92	1076		18.08	1268	

a. All comparisons are one-way ANOVAs.

b. Time per patient.

Appendix I

CARE PROVIDER COSTS-PER-PATIENT COMPARISONS ACCORDING TO CATEGORY OF ILLNESS
AND LEVEL OF PHYSICIAN CARE/CONSULTATION COST

CATEGORY OF ILLNESS	COMPARISON ^a	Level of Physician Care/Consultation Costs (per hour)												No. Pts COC/AMIC			
		\$10.70			\$12.12			\$14.29			\$16.38				\$18.55		
		GOC	AMIC	P =	GOC	AMIC	P =	GOC	AMIC	P =	GOC	AMIC	P =		GOC	AMIC	P =
Eye	COC vs AMIC	\$	\$		\$	\$		\$	\$		\$	\$		\$	\$		
		1.30	1.97	.0231	1.38	2.03	.0351	1.51	2.12	.0625	1.63	2.20	.1003	1.75	2.29	.1315	
(1)	COC Physician vs AMIC	1.10	1.99	.0096	1.24	2.05	.0257	1.46	2.14	.0827	1.68	2.23	.1890	1.90	2.32	.3533	
Respi- ratory	COC vs AMIC	1.61	1.62	.9553	1.77	1.66	.4627	2.02	1.73	.0746	2.25	1.79	.0084	2.50	1.85	.0007	
(2)	COC Physician vs AMIC	1.56	1.68	.4745	1.76	1.72	.8079	2.08	1.79	.1317	2.38	1.85	.0113	2.70	1.92	.0006	
Gastrin- testinal	COC vs AMIC	1.60	2.30	.0034	1.80	2.39	.0217	2.10	2.52	.1410	2.38	2.64	.4129	2.68	2.77	.7969	
(3)	COC Physician vs AMIC	1.56	2.23	.0070	1.77	2.31	.0421	2.08	2.43	.2406	2.39	2.55	.6221	2.70	2.67	.9252	
Genito- urinary	COC vs AMIC	1.62	1.84	.4644	1.77	1.90	.6810	1.99	1.98	.9837	2.20	2.07	.7060	2.43	2.16	.4864	
(4)	COC Physician vs AMIC	1.42	1.79	.2692	1.61	1.85	.5036	1.89	1.93	.9339	2.17	2.00	.6879	2.46	2.08	.4033	
Musculo- Skeletal, Spine	COC vs AMIC	1.67	3.14	.0310	1.84	3.28	.0500	2.11	3.49	.0898	2.37	3.69	.1387	2.63	3.90	.1969	
(5)	COC Physician vs AMIC	1.54	2.14	.2143	1.74	2.22	.3742	2.06	2.34	.6431	2.36	2.46	.8828	2.67	2.58	.9106	
Musculo- Skeletal, Extremity	COC vs AMIC	1.88	2.15	.4324	2.06	2.22	.6721	2.35	2.33	.9729	2.62	2.44	.6986	2.91	2.55	.4935	
(6)	COC Physician vs AMIC	1.64	2.20	.0573	1.86	2.28	.1968	2.19	2.40	.5812	2.51	2.51	.9994	2.85	2.64	.6507	
SKin, Regional	COC vs AMIC	2.22	1.72	.1843	2.38	1.78	.1321	2.62	1.87	.0831	2.86	1.96	.0564	3.10	2.06	.0399	
(7)	COC Physician vs AMIC	1.51	1.53	.9561	1.71	1.56	.6422	2.02	1.61	.2649	2.32	1.66	.1068	2.62	1.71	.0424	
SKin, General	COC vs AMIC	1.08	1.72	.0016	1.17	1.77	.0059	1.32	1.84	.0286	1.47	1.91	.0868	1.62	1.98	.1991	
(8)	COC Physician vs AMIC	1.09	1.61	.0117	1.24	1.64	.0564	1.46	1.70	.2898	1.67	1.76	.7372	1.90	1.81	.7459	
Other	COC vs AMIC	1.80	1.38	.0015	1.94	1.43	.0003	2.16	1.52	.0000	2.37	1.60	.0000	2.60	1.68	.0000	
(9)	COC Physician vs AMIC	1.51	1.33	.1444	1.71	1.37	.0130	2.01	1.44	.0002	2.31	1.50	.0000	2.61	1.57	.0000	
1 - 8	COC vs AMIC	1.67	1.81	.0993	1.83	1.87	.6613	2.07	1.95	.2513	2.31	2.03	.0158	2.55	2.11	.0004	
All	COC Physician vs AMIC	1.50	1.79	.0014	1.70	1.84	.1519	2.01	1.92	.3967	2.30	1.99	.0081	2.61	2.07	.0000	
	COC vs AMIC	1.74	1.74	.9971	1.89	1.79	.1763	2.12	1.88	.0019	2.35	1.96	.0000	2.58	2.04	.0000	
	COC Physician vs AMIC	1.50	1.73	.0006	1.70	1.78	.3027	2.01	1.85	.0470	2.30	1.93	.0000	2.61	2.00	.0000	

a. All statistical comparisons are one-way ANOVAs.

Appendix J

DISPOSITION-CORRECTED CARE PROVIDER COSTS-PER-PATIENT COMPARISONS ACCORDING TO CATEGORY OF ILLNESS
AND LEVEL OF PHYSICIAN CARE/CONSULTATION COST

CATEGORY OF ILLNESS	COMPARISON ^a	Level of Physician Care/Consultation Costs (per hour)												No. Pts COC/AMIC						
		\$10.70			\$12.12			\$14.29			\$16.38				\$18.55			\$19.97		
		GOC	AMIC	P =	GOC	AMIC	P =	GOC	AMIC	P =	GOC	AMIC	P =		GOC	AMIC	P =	GOC	AMIC	P =
Eye	COC vs AMIC	\$	\$		\$	\$		\$	\$		\$	\$		\$	\$		\$	\$		
		2.36	3.12	.1162	2.44	3.18	.1368	2.56	3.27	.1728	2.68	3.35	.2123	2.81	3.44	.2576	2.89	3.49	.2893	
(1)	COC Physician vs AMOSIST	\$	\$		\$	\$		\$	\$		\$	\$		\$	\$		\$	\$		
		2.19	2.86	.2429	2.33	2.92	.3209	2.56	3.01	.4600	2.77	3.09	.6097	2.99	3.18	.7717	3.14	3.24	.8769	
Respi- ratory	COC vs AMIC	\$	\$		\$	\$		\$	\$		\$	\$		\$	\$		\$	\$		
		2.53	2.44	.6624	2.69	2.48	.3390	2.94	2.54	.0921	3.17	2.61	.0206	3.42	2.67	.0037	3.58	2.71	.0011	
(2)	COC Physician vs AMOSIST	\$	\$		\$	\$		\$	\$		\$	\$		\$	\$		\$	\$		
		2.56	2.40	.4934	2.76	2.44	.1823	3.08	2.51	.0255	3.38	2.57	.0027	3.70	2.64	.0002	3.91	2.68	.0000	
Gastroin- testinal	COC vs AMIC	\$	\$		\$	\$		\$	\$		\$	\$		\$	\$		\$	\$		
		2.82	5.21	.2446	3.02	3.29	.4282	3.31	3.42	.7778	3.60	3.55	.8828	3.90	3.68	.5916	4.10	3.76	.4454	
(3)	COC Physician vs AMOSIST	\$	\$		\$	\$		\$	\$		\$	\$		\$	\$		\$	\$		
		2.81	3.03	.5042	3.02	3.11	.7885	3.34	3.23	.7822	3.64	3.35	.4639	3.96	3.47	.2527	4.16	3.55	.1667	
Genito- urinary	COC vs AMIC	\$	\$		\$	\$		\$	\$		\$	\$		\$	\$		\$	\$		
		2.62	2.77	.7276	2.77	2.83	.8912	2.99	2.91	.8692	3.20	3.00	.6668	3.42	3.08	.4954	3.57	3.14	.4046	
(4)	COC Physician vs AMOSIST	\$	\$		\$	\$		\$	\$		\$	\$		\$	\$		\$	\$		
		2.06	2.69	.1911	2.24	2.74	.3181	2.53	2.82	.5771	2.81	2.90	.8664	3.10	2.98	.8405	3.28	3.03	.6708	
Musculo- skeletal, Spine	COC vs AMIC	\$	\$		\$	\$		\$	\$		\$	\$		\$	\$		\$	\$		
		3.37	4.74	.0716	3.54	4.88	.0988	3.81	5.09	.1487	4.06	5.29	.2038	4.33	5.50	.2650	4.51	5.64	.3059	
(5)	COC Physician vs AMOSIST	\$	\$		\$	\$		\$	\$		\$	\$		\$	\$		\$	\$		
		3.32	3.26	.9238	3.52	3.34	.7830	3.84	3.46	.6127	4.14	3.58	.4917	4.45	3.70	.3993	4.65	3.79	.3525	
Musculo- skeletal, Extremity	COC vs AMIC	\$	\$		\$	\$		\$	\$		\$	\$		\$	\$		\$	\$		
		2.96	3.53	.1657	3.15	3.60	.2948	3.43	3.71	.5526	3.71	3.82	.8239	3.99	3.93	.9167	4.17	4.00	.7711	
(6)	COC Physician vs AMOSIST	\$	\$		\$	\$		\$	\$		\$	\$		\$	\$		\$	\$		
		2.65	3.25	.0953	2.87	3.33	.2287	3.20	3.45	.5512	3.52	3.57	.9125	3.85	3.69	.7558	4.07	3.77	.5835	
Skin, Regional	COC vs AMIC	\$	\$		\$	\$		\$	\$		\$	\$		\$	\$		\$	\$		
		2.91	2.79	.7961	3.07	2.85	.6514	3.31	2.94	.4746	3.54	3.03	.3503	3.79	3.12	.2585	3.95	3.19	.2138	
(7)	COC Physician vs AMOSIST	\$	\$		\$	\$		\$	\$		\$	\$		\$	\$		\$	\$		
		2.33	2.53	.6064	2.53	2.57	.9230	2.84	2.62	.6365	3.13	2.67	.3441	3.44	2.72	.1710	3.64	2.75	.1068	
Skin, General	COC vs AMIC	\$	\$		\$	\$		\$	\$		\$	\$		\$	\$		\$	\$		
		1.99	2.58	.0963	2.09	2.63	.1377	2.24	2.70	.2227	2.38	2.76	.3287	2.53	2.83	.4594	2.63	2.88	.5526	
(8)	COC Physician vs AMOSIST	\$	\$		\$	\$		\$	\$		\$	\$		\$	\$		\$	\$		
		2.10	2.24	.6986	2.25	2.28	.9374	2.47	2.33	.7102	2.69	2.39	.4360	2.91	2.45	.2402	3.05	2.48	.1561	
Other	COC vs AMIC	\$	\$		\$	\$		\$	\$		\$	\$		\$	\$		\$	\$		
		3.03	2.42	.0008	3.17	2.48	.0002	3.40	2.56	.0000	3.61	2.64	.0000	3.83	2.73	.0000	3.97	2.78	.0000	
(9)	COC Physician vs AMOSIST	\$	\$		\$	\$		\$	\$		\$	\$		\$	\$		\$	\$		
		2.78	2.39	.0339	2.98	2.43	.0048	3.29	2.50	.0002	3.58	2.56	.0000	3.87	2.63	.0000	4.09	2.67	.0000	
1 - 8	COC vs AMIC	\$	\$		\$	\$		\$	\$		\$	\$		\$	\$		\$	\$		
		2.73	2.74	.9208	2.89	2.80	.4664	3.14	2.88	.0615	3.37	2.96	.0046	3.61	3.04	.0002	3.77	3.10	.0000	
All	COC Physician vs AMOSIST	\$	\$		\$	\$		\$	\$		\$	\$		\$	\$		\$	\$		
		2.61	2.59	.8793	2.81	2.64	.1950	3.11	2.72	.0042	3.41	2.79	.0000	3.71	2.87	.0000	3.91	2.92	.0000	
All	COC vs AMIC	\$	\$		\$	\$		\$	\$		\$	\$		\$	\$		\$	\$		
		2.90	2.69	.0232	3.02	2.74	.0014	3.28	2.83	.0000	3.51	2.91	.0000	3.74	2.99	.0000	3.89	3.05	.0000	
All	COC Physician vs AMOSIST	\$	\$		\$	\$		\$	\$		\$	\$		\$	\$		\$	\$		
		2.70	2.56	.1285	2.90	2.61	.0027	3.21	2.69	.0000	3.50	2.76	.0000	3.81	2.84	.0000	4.01	2.89	.0000	

a. All statistical comparisons are one-way ANOVAs.

Appendix K

COMPARISONS OF CARE PROVIDER COSTS-PER-PATIENT USING
BAMC-CITED LEVELS OF CARE PROVIDER COSTS

CATEGORY OF ILLNESS	CLINIC/ CARE PROVIDER	COMPARISONS ^a					
		SYSTEM-WIDE			CARE PROVIDER		
		Cost Per Patient	No. PTS	Sig. (p =)	Cost Per Patient	No. PTS	Sig. (p =)
Eye (1)	GOC/Physician	2.72	32	.2057	2.92	18	.4040
	AMIC/AMOSIST	3.44	44		3.48	55	
Respi- ratory (2)	GOC/Physician	3.85	113	.0002	4.14	87	.0003
	AMIC/AMOSIST	2.78	412		2.88	510	
Gastroin- testinal (3)	GOC/Physician	4.12	69	.9182	4.14	65	.8165
	AMIC/AMOSIST	4.17	90		4.02	105	
Genitour- inary (4)	GOC/Physician	3.75	31	.3934	3.77	22	.3471
	AMIC/AMOSIST	3.24	124		3.13	125	
Musculo- Skeletal Spine (5)	GOC/Physician	4.06	48	.2114	4.09	41	.8636
	AMIC/AMOSIST	5.94	14		3.89	20	
Musculo- Skeletal Extremity (6)	GOC/Physician	4.48	83	.4222	4.37	67	.5775
	AMIC/AMOSIST	3.84	59		3.97	85	
Skin, Regional (7)	GOC/Physician	4.80	45	.0294	4.02	31	.0335
	AMIC/AMOSIST	3.09	71		2.56	78	
Skin, General (8)	GOC/Physician	2.50	37	.2690	2.91	25	.6282
	AMIC/AMOSIST	2.96	82		2.72	124	
Other (9)	GOC/Physician	4.01	601	.0000	4.00	427	.0000
	AMIC/AMOSIST	2.54	183		2.36	172	
1 - 8	GOC/Physician	3.93	459	.0001	4.00	356	.0000
	AMIC/AMOSIST	3.18	897		3.11	1103	
All	GOC/Physician	3.98	1060	.0000	4.00	783	.0000
	AMIC/AMOSIST	3.07	1080		3.01	1275	

a. All comparisons are one-way ANOVAs. Amounts are expressed in dollars per patient.

Appendix L

COMPARISON OF DISPOSITION-CORRECTED CARE PROVIDER COSTS-PER-PATIENT
USING BAMC-CITED LEVELS OF CARE PROVIDER COSTS

CATEGORY OF ILLNESS	CLINIC/ CARE PROVIDER	COMPARISONS ^a					
		SYSTEM-WIDE			CARE PROVIDER		
		Cost per Patient	No. PTS	Sig. (p =)	Cost per Patient	No. PTS	Sig. (p =)
Eye (1)	GOC/Physician	4.86	32	.3515	5.13	18	.9222
	AMIC/AMOSIST	5.76	44		5.24	55	
Respi- ratory (2)	GOC/Physician	5.71	113	.0039	6.17	87	.0002
	AMIC/AMOSIST	4.44	412		4.39	510	
Gastroin- testinal (3)	GOC/Physician	6.59	69	.4114	6.68	65	.1417
	AMIC/AMOSIST	6.01	90		5.64	105	
Genitour- inary (4)	GOC/Physician	5.76	31	.4487	5.06	22	.9074
	AMIC/AMOSIST	5.12	124		4.95	125	
Musculo- Skeletal Spine (5)	GOC/Physician	7.49	48	.3184	7.70	41	.2903
	AMIC/AMOSIST	9.19	14		6.16	20	
Musculo- Skeletal Extremity (6)	GOC/Physician	6.67	83	.9657	6.40	67	.7267
	AMIC/AMOSIST	6.63	59		6.11	85	
Skin, Regional (7)	GOC/Physician	6.19	45	.3363	5.68	31	.2276
	AMIC/AMOSIST	5.26	71		4.61	78	
Skin, General (8)	GOC/Physician	4.34	37	.6224	4.96	25	.1752
	AMIC/AMOSIST	4.70	82		4.00	124	
Other (9)	GOC/Physician	6.51	601	.0000	6.59	427	.0000
	AMIC/AMOSIST	4.66	183		4.51	172	
1 - 8	GOC/Physician	6.09	459	.0001	6.23	356	.0000
	AMIC/AMOSIST	5.06	897		4.73	1103	
All	GOC/Physician	6.33	1060	.0000	6.43	783	.0000
	AMIC/AMOSIST	4.99	1080		4.70	1275	

a. All comparisons are one-way ANOVAs. Amounts are expressed in dollars per patient.

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